Annual Report

2021

Science for a **better life**

Five-Year Summary

€ million	2017	2018	2019	2020	2021
Bayer Group financial KPIs					
Sales	35,015	36,742	43,545	41,400	**44,081**
EBITDA[1]	8,563	9,695	9,529	(2,910)	**6,409**
EBITDA before special items[1]	9,288	8,969	11,474	11,461	**11,179**
EBITDA margin before special items[1]	26.5%	24.4%	26.3%	27.7%	**25.4%**
EBIT[1]	5,903	3,454	4,162	(16,169)	**3,353**
EBIT before special items[1]	7,130	6,013	6,975	7,095	**7,295**
Income before income taxes	4,577	1,886	2,853	(17,250)	**2,046**
Net income (from continuing and discontinued operations)	7,336	1,695	4,091	(10,495)	**1,000**
Earnings per share (from continuing and discontinued operations) (€)[1]	8.29	1.80	4.17	(10.68)	**1.02**
Core earnings per share (from continuing operations) (€)[1]	6.64	5.60	6.38	6.39	**6.51**
Free cash flow	5,202	4,652	4,214	1,343	**1,415**
Net financial debt	3,595	35,679	34,068	30,045	**33,137**
Capital expenditures (newly capitalized)	2,418	2,368	2,920	3,138	**3,004**
Return on capital employed (ROCE) (%)	10.8	4.0	3.7	–16.5	**3.8**
Bayer AG					
Total dividend payment	2,402	2,611	2,751	1,965	**1,965**
Dividend per share (€)	2.80	2.80	2.80	2.00	**2.00**
Bayer Group nonfinancial KPIs[2]					
Number of smallholder farmers in low- and middle-income countries supported by products, services and partnerships (million)			42	45	**49**
Number of women in low- and middle-income countries who have their need for modern contraception satisfied due to interventions supported by Bayer (million)			38	40	**41**
Number of people in underserved[3] communities whose self-care is supported by interventions from Bayer (million)			41	43	**46**
Scope 1 and 2 greenhouse gas emissions (million t)			3.76	3.58	**3.17**
Scope 3 greenhouse gas emissions from relevant categories (million t)			8.82	8.22	**8.16**
Off-setting of remaining Scope 1 and 2 greenhouse gas emissions (million t)			0.00	0.20	**0.30**
Innovation					
Research and development expenses[4]	4,504	5,105	5,301	7,126	**5,412**
Ratio of R&D expenses to sales – Crop Science (%)[5]	11.7	13.0	11.3	10.4	**10.5**
Ratio of R&D expenses to sales – Pharmaceuticals (%)[5]	16.2	15.5	15.6	15.5	**16.1**
Ratio of R&D expenses to sales – Consumer Health (%)[5]	3.9	4.1	3.9	3.8	**3.7**
Employees					
Number of employees[6] (Dec. 31)	99,820	107,894	103,824	99,538	**99,637**
Personnel expenses (including pension expenses) (€ million)	9,528	10,778	11,788	9,769	**11,798**
Safety & Environmental Protection					
Recordable Incident Rate (RIR) for Bayer employees	0.45	0.40	0.46	0.32	**0.37**
Process Safety Incident Rate (PSI-R)	–	–	0.10	0.08	**0.08**
Total energy consumption (terajoules)	25,832	28,903	39,212	35,858	**34,835**
Energy efficiency (kWh/€1,000)[7]	205	219	250	241	**220**
Hazardous waste generated (thousand t)	485	303	316	305	**316**
Water use (million m³)	98	42	59	57	**55**

2020 figures restated; figures for 2017 – 2019 as last reported

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

[2] For more information see A 1.2.1.

[3] Economically or medically

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

[5] R&D expenses before special items

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

[7] Quotient of total energy consumption and external sales

Fiscal 2021:

Bayer: Dynamic growth – progress in innovation

// Group sales: €44.1 billion (Fx & p adj. +8.9%)

// EBITDA before special items: €11.2 billion (–2.5%) – inflation-related increase in costs and negative currency effects largely offset

// Crop Science grows sales by double-digit percentage (Fx & p adj.) and increases earnings

// Pharmaceuticals posts higher sales – earnings decline slightly year on year due to extensive forward-looking investment

// Consumer Health delivers excellent performance

// Core earnings per share rise to €6.51 (+1.9%)

// Net income: €1.0 billion

// Free cash flow (€1.4 billion) and net financial debt (€33.1 billion) much better than expected

// Proposed dividend: €2.00 per share

// Successful product launches and progress with platform technologies

// Good progress with the implementation of our long-term sustainability goals: direct and indirect CO_2 emissions down by 11.5%

// Outlook for 2022: Significant increase in sales, earnings and free cash flow

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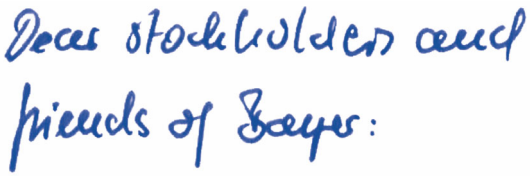
Chairman's Letter

Growth, innovation, sustainability: Bayer is on the right track



2021 was a year that was once again dominated by the coronavirus pandemic, and like so many others around the world, we at Bayer grieve for the colleagues we have lost to COVID-19.

The pandemic has also hit many industries hard. It is therefore all the more important that we once again continued to keep patients, farmers and consumers around the world reliably supplied with what are in some cases essential products. In that respect, 2021 was a successful year for us in which we achieved a lot. Our business performed markedly better than expected in all divisions, and we have exceeded our adjusted Group forecast. So we are on the right track.

We also made key investments in 2021 and entered into important cooperation agreements, aimed at safeguarding our company's long-term success. We demonstrated our innovation capabilities yet again by strengthening our research and development pipeline and launching new products, and continued to make great strides toward achieving our ambitious sustainability targets.

The success we have achieved despite the challenges posed by the global pandemic is thanks to our employees around the world. It was their tireless efforts and commitment that made it all possible. That's why I would like to express my sincere gratitude to the entire Bayer team.

Bayer CEO Werner Baumann

Dynamic growth

Let's look at what we achieved operationally: Sales increased last year to just above €44 billion, which when adjusted for currency and portfolio effects represents a marked increase of almost 9%. All three divisions posted substantial growth. EBITDA before special items came in at more than €11 billion, and was therefore as expected slightly below the prior-year level. This was due to inflation-related increases in costs and substantial negative currency effects, as well as extensive investments in our company's future. Core earnings per share increased to €6.51.

On this basis we have decided to propose to the Annual Stockholders' Meeting that a dividend of €2.00 per share be paid for 2021, thus upholding our policy of paying a dividend of 30% to 40% of core earnings per share. As in 2020, however, we will remain at the lower end of this corridor so that we have further funds available for investing in innovation and growth.

Of course, we are aware that not everything is going smoothly. In particular, we cannot be satisfied with the performance of our stock last year, which doesn't remotely reflect the true value of our company.

We believe the main reason for this is that investors are remaining cautious due to the glyphosate litigation in the United States. Yet here as well, we can report a number of positive developments last year. In particular, we developed a five-point plan to address the legal uncertainty surrounding possible future lawsuits.

As part of this plan we also asked the U.S. Supreme Court to review this litigation complex. In our view, there are compelling legal arguments for the Supreme Court to examine and reverse the lower-court decisions in line with the petition we filed. The Supreme Court has now requested the views of the U.S. government, which we consider a positive sign.

Should the Supreme Court ultimately decide in our favor, that could largely put an end to the litigation. Nonetheless, in the second quarter of 2021, we established appropriate provisions for future claims and settlements in case of a negative Supreme Court outcome. We are also implementing long-term measures to mitigate risks as part of the five-point plan.

Focus on innovation

We are now in a position to turn our full focus to what sets us apart as a company and what we do particularly well: using state-of-the-art technologies to develop innovative products and solutions that improve people's lives. Our work addresses long-term societal megatrends such as the growing and aging world population and the increasing need for a more sustainable way of doing business. Last year we invested €5.4 billion in research and development to this end.

At Pharmaceuticals, we significantly expanded our cell and gene therapy platform. We recently secured access to novel gene editing technologies through a strategic partnership with Mammoth Biosciences, founded by Nobel Prize laureate Jennifer Doudna. We have one of the leading cell and gene therapy platforms in the industry and are thus well positioned to face the future.

We also made considerable progress in developing our late-stage pharmaceutical pipeline and our launches of promising products. The most notable examples here are our cancer drug Nubeqa™, our cardiovascular medicines Verquvo™ and Kerendia™, and our development candidate elinzanetant in women's healthcare. We believe these new medicines are blockbuster candidates, each with the potential to generate peak annual sales amounting to billions.

At the same time, we are securing access to technologies with substantial innovation potential through targeted acquisitions and a broad-based network of collaborations and strategic alliances. Our Leaps by Bayer unit, which invests specifically in disruptive innovations in the areas of health and nutrition, plays an important role here. The Leaps portfolio currently comprises investments in more than 50 biotech startups.

In addition, the acquisition of U.S. company Vividion has further strengthened our oncology and immunology activities, and the company's technology can also be utilized in other therapeutic fields. We have also expanded our development portfolio for the treatment of prostate cancer through the acquisition of two U.S. companies, Noria and PSMA.

Our Crop Science Division also successfully launched innovative products last year, such as our new Intacta 2 Xtend™ soybeans, which are less susceptible to infestation by insect pests. In corn, we introduced SmartStax™ PRO to the market – the third generation of our technology for corn rootworm control.

We further expanded our agricultural research network last year as well. For example, we invested in Andes, a U.S. company that has developed a novel technology to enable plants to meet their own nitrogen needs. Furthermore, our investments in U.S. company Sound Agriculture are geared toward reducing global use of nitrogen fertilizer. Together with JoynBio, our joint venture with Ginkgo Bioworks, this means that three companies from our research network are already working on this endeavor.

We are also taking big steps toward the future of digital farming, as evidenced by our strategic partnership with Microsoft. Together we will develop new cloud-based digital platforms and enable solutions that can be used by many companies in the agriculture industry.

And we made progress in launching innovative products at Consumer Health, too. For example, Bepanthen™ Derma, a new skincare product for very dry skin, was introduced to the market in Latin America, Europe and Asia. In the United States we launched AleveX™, a product for topical pain relief. Also in the United States, the regulatory authority granted our company approval to market our Astepro™ Allergy nasal spray – previously available on prescription only – as the first and only over-the-counter nonsteroidal antihistamine nasal spray.

We are focusing consistently on digitalization at Consumer Health as well. For example, we have entered into a partnership with Ada Health, a company which has developed an artificial-intelligence-based platform that analyzes each individual's health status and helps users find appropriate medical care.

These examples demonstrate how research and development make up the essence of our company. Innovation is part of our DNA. That's why we are so dependent on the trust society places in science. Yet trust can only be built where there is transparency. For that reason, we are the first DAX company to have introduced a transparency register in which we disclose all new scientific collaborations with universities, public research institutes and individuals in Germany.

Sustainability: substantial progress, important strategic decisions

We have also made substantial progress and taken important strategic decisions as regards our ambitious sustainability targets, which are integral to our business strategy. We have increased the share of green electricity at our own sites, and we have reduced our greenhouse gas emissions by 11.5%. This is how we stay on track to achieve our goal of becoming a carbon-neutral company by the end of the decade.

Furthermore, through our Carbon Initiative, we are working to sustainably reduce and offset carbon dioxide emissions in the agricultural value chain. As part of this effort, farmers are incentivized to use climate-smart practices – a new source of income for them. The latest development within this initiative is *Project Carbonview*, a digital solution unique in the industry that helps farmers measure the carbon footprint of their value chain.

Yet sustainability involves more than protecting the climate and the environment. It also involves social objectives, such as building toward a fairer society. We have made progress here as well, such as with our target of helping 100 million women and girls gain access to modern contraceptives by 2030, particularly in low- and middle-income countries. To reach this goal, we will invest more than €400 million to expand our production capacities.

Another social objective that is especially important to us is diversity and inclusion, and we are committed to achieving gender equality at all management levels by 2030. Overall, we have intensified our efforts to attain a more inclusive and diverse workforce and company culture.

Major progress – but still a long way to go

We achieved a lot in 2021, even though it was not an easy year, not least due to the pandemic. Yet there is still much to be done. Our task now is to build on the momentum of last year and deliver results. We are focused on achieving our ambitious financial and nonfinancial business objectives.

We will also further expand our outstanding position in the application of new technologies and processes in the life sciences. By leveraging the benefits of digital, biological and chemical technologies, it will be possible to achieve groundbreaking innovations that will revolutionize health care and nutrition. In the future we will be able to not just treat an increasing number of diseases, but also cure or even prevent them. Consumers will be able to take better care of their own health. And farmers will be able to not only produce more food, but do so in an increasingly sustainable and environmentally friendly way.

We have unique opportunities. Bayer is a systemically important player in the areas of health care and nutrition, and we can make a crucial contribution to achieving the United Nations' Sustainable Development Goals. We are stepping up to this responsibility – and we aim to leverage the opportunities that come with it.

To do so, we will press ahead with the transformation of our company on behalf of all our stakeholders – toward new, sustainable business models, digital solutions and a more inclusive company culture. We will become even faster, more flexible and more efficient. And we aim to become even better at attracting, retaining and developing the best and most talented employees. To advance these issues, we have strengthened our Board of Management: Sarena Lin is focusing on these topics as our Chief Transformation and Talent Officer. I am also pleased that Rodrigo Santos joined our Board of Management team at the beginning of the year, succeeding Liam Condon as head of the Crop Science Division.

I would like to thank you, our shareholders, on behalf of the entire Board of Management. Thank you for your continued loyalty and support. We are doing everything in our power to justify your trust.

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

Rodrigo Santos

Crop Science

Rodrigo Santos studied Agricultural Engineering in São Paulo and received his MBA in Ohio. He joined Monsanto in 1999 and recently served as Chief Operating Officer at Bayer's Crop Science Division. During those years he held different positions in sales, marketing, and strategy, among others, leading organizations in Latin America, Europe and in the United States. Santos has served as a member of the Bayer Board of Management and head of the Crop Science Division since January 2022.

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 2021, 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. Furthermore, 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. In addition, 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 important markets.

Changes on the Supervisory Board

Johanna W. (Hanneke) Faber and Prof. Dr. Wolfgang Plischke stepped down from the Supervisory Board at the end of the 2021 Annual Stockholders' Meeting, at the end of their terms. At the Annual Stockholders' Meeting, stockholders elected Dr. Fei-Fei Li and Alberto Weisser as their successors for a term of office of four years each. Dr. Fei-Fei Li is among the leading scientists in the field of artificial intelligence in the United States with very broad research interests, including healthcare. Alberto Weisser is a renowned agricultural expert with decades of capital market experience gained in the United States through his time as the CEO and CFO of the agriculture and food company Bunge. The elections of Dr. Fei-Fei Li and Alberto Weisser help to fulfill the Supervisory Board's stated goals with regard to the expertise and experience of its membership, while also taking into account investor feedback to expand the Supervisory Board's skillset and geographical presence in alignment with Bayer's operational and strategic needs.

An extensive onboarding program was organized for the members elected to the Supervisory Board in 2021, during which they were able to meet individually with each member of the Board of Management as well as representatives from the second management level to receive information on 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 committee membership.

Work of the Supervisory Board

The Supervisory Board convened for nine meetings and one additional discussion in 2021. The average attendance rate by Supervisory Board members at the meetings of the Supervisory Board and of its committees held in 2021 was more than 97 percent.

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

Each member of the Supervisory Board 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.

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. Newly implemented in the second half of 2021, the Supervisory Board's ordinary meetings now also formally include an "executive session" as a separate agenda item, during which no Board of Management members are present. Pursuant to a provision of the German Act to Strengthen Financial Market Integrity, the Board of Management only attends meetings of the Supervisory Board and the Audit Committee at which the external auditor is present as an expert if the Supervisory Board considers its participation to be necessary. The Supervisory Board and the Audit Committee have stated that while they generally consider such participation to be necessary, meetings shall be held without Board of Management participation when it is advisable to do so or when a member of the Supervisory Board makes such a request.

The deliberations of the Supervisory Board in 2021 primarily related to questions concerning Bayer's strategy, portfolio, business activities and the composition of the Supervisory Board and Board of Management. The work of the Supervisory Board focused on the following areas in particular, each of which was discussed at multiple meetings: (1) individual corporate acquisitions and divestments; and (2) the glyphosate litigations and the additional material litigations involving PCBs and dicamba, which the Supervisory Board and several of its committees dealt with intensively. Outside of the meetings of the Supervisory Board, these issues were also the subject of extensive dialogue between the 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 an extraordinary meeting in January, the Supervisory Board appointed Sarena Lin to the Board of Management with effect from February 1 and dealt with the Board of Management service contract to be concluded with her and the distribution of responsibilities within the Board of Management. The Supervisory Board also adopted a resolution on the regular review of the fixed compensation of the members of the Board of Management and the pensions of the former members of the Board of Management.

2. At its February meeting, the Supervisory Board extended Stefan Oelrich's appointment to the Board of Management by an additional four years. The Supervisory Board addressed the 2020 Annual Report and the agenda for the 2021 Annual Stockholders' Meeting. It dealt with the regular risk report and also discussed and affirmed the ongoing program to accelerate the company's transformation. In view of the upcoming changes in the composition of the Supervisory Board, the Supervisory Board discussed the future membership of its committees.

3. 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.

4. At its April meeting, the Supervisory Board discussed the company's business performance to date. The Chairman of the Supervisory Board reported on several conversations he had engaged in with investors, which the Supervisory Board subsequently discussed. The Supervisory Board also addressed the upcoming Annual Stockholders' Meeting and undertook changes to the membership of the committees.

5. During a discussion convened at short notice in May and attended by the independent legal expert to the Supervisory Board, John H. Beisner, the Supervisory Board discussed new developments in the glyphosate litigations– the presiding judge's rejection of the settlement negotiated with plaintiffs' representatives – and the conclusions to be drawn regarding the further management of these litigations.

6. At an extraordinary meeting in July that was also attended by John H. Beisner, the Supervisory Board addressed in detail the status of the glyphosate litigations and the further management of the litigations with the aid of a "five-point plan," the details of which were being finalized. The Supervisory Board also discussed the acquisition of Vividion Therapeutics, a company specializing in biopharmaceutical drug discovery. Finally, the Supervisory Board addressed a lawsuit against resolutions by the Annual Stockholders' Meeting, the organization of the work of the Supervisory Board, and the upcoming Supervisory Board elections of the employee representatives.

7. At a further extraordinary meeting in July, following an additional detailed discussion, the Supervisory Board approved the acquisition of Vividion Therapeutics.

8. Through a written resolution adopted in July, the Supervisory Board approved an increase in the financing framework for settling the glyphosate litigations within the scope of the five-point plan following the discussion of this matter at a prior extraordinary meeting.

9. At a two-day meeting in September that was held as an in-person event, the Supervisory Board first discussed the company's situation during an "executive session" in which the Board of Management did not participate, focusing partly on some of the critical perspectives shared by some investors with respect to company structure, leadership and ongoing litigation, as well as possible conclusions to be drawn from this assessment. The Supervisory Board also addressed matters related to the compensation of the Board of Management, the level of compensation in a cross-comparison, the schedule and methodology employed for the regular review of Board of Management compensation, and increasing the weighting of long-term variable compensation while reducing the short-term variable compensation of the members of the Board of Management. The Supervisory Board resolved, among other measures, to undertake regular adjustments to the compensation of the members of the Board of Management in future with effect from April of each year based on a cross-comparison. The Supervisory Board discussed the business performance in the year to date and then also addressed in detail the strategy of the Group as a whole and that of the Consumer Health, Crop Science and Pharmaceuticals divisions as well as the "Leaps by Bayer" venture capital unit, along with the innovation and transformation strategy and financial planning. Following intensive discussion, the Supervisory Board unanimously resolved to support the strategies of the Group and the divisions as presented by the Board of Management. Training and information events were held for the Supervisory Board members at the end of each of the two meeting days. During these events, the Supervisory Board members discussed the future of the healthcare industry in Germany and undertook campus tours of the Pharmaceuticals site in Berlin to get a closer look at the areas of research and development, external innovation and production.

10. At an extraordinary meeting in October, the Supervisory Board approved the early termination of Liam Condon's term of service as a member of the Board of Management with effect from the end of 2021, and appointed Rodrigo Santos, who previously served as Chief Operating Officer of the Crop Science Division, as his successor on the Board of Management with effect from January 1, 2022. The Supervisory Board subsequently reviewed the findings of the Supervisory Board efficiency audit, which had yielded very good results on the whole, and explored the conclusions to be drawn from it. The efficiency audit had been conducted with the support of an external board consultant.

11. The ordinary Supervisory Board meeting in December began with an executive session, which involved a report by the Supervisory Board Chairman followed by a discussion on the results of the conversations with investors that he had engaged in during the Corporate Governance Roadshow. The Supervisory Board then conducted the regular review of the pensions of the former members of the Board of Management and dealt with the vertical appropriateness of the compensation of the Board of Management. Other agenda items pertained to the operational planning for the period 2022 through 2024 and matters related to the rating and financing. The Supervisory Board approved the divestment of the interest in Century Therapeutics and agreed on the conclusions to be drawn from the efficiency audit, based on corresponding proposals prepared by the Presidial Committee. Finally, the Supervisory Board adopted a resolution pertaining to the amendment of the Supervisory Board's rules of procedure, through which, for example, an ESG Committee of the Supervisory Board was formed with effect from January 1, 2022, as well as a resolution on the dissolution of the special committee for dealing with the glyphosate litigations. The Supervisory Board elected the members of the ESG Committee and resolved to issue an unqualified declaration of compliance with the German Corporate Governance Code.

Committees of the Supervisory Board

In 2021, the Supervisory Board had a Presidial Committee, an Audit Committee, a Human Resources Committee, a Nominations Committee, an Innovation Committee and the special committee established in 2020 for dealing with the glyphosate litigations. The latter special committee was dissolved with effect from the end of 2021 in view of the status of proceedings reached in the glyphosate litigations. The full Supervisory Board will address any further material developments in these litigations with the continued support of U.S. attorney John H. Beisner as an independent legal advisor. The Supervisory Board established an ESG Committee with effect from the beginning of 2022.

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.

The Presidial Committee convened twice in 2021. At a meeting in February, the Presidial Committee held a preparatory discussion on adjusting Supervisory Board compensation. The Supervisory Board and Board of Management later proposed this adjustment to the Annual Stockholders' Meeting, which then adopted it. At another meeting in November, the Presidial Committee dealt with the results of the efficiency audit, which had been conducted with external support, and submitted proposals to the full Supervisory Board regarding the conclusions of this audit.

Audit Committee: The Audit Committee comprises three stockholder representatives and three employee representatives. The Chairman of this Committee, Horst Baier, satisfies the statutory requirements concerning expertise in the field of accounting, and Supervisory Board Chairman Norbert Winkeljohann, who is also a member of this committee, satisfies the requirements concerning expertise in the field of auditing. 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 and appropriateness of the internal control system and the risk management system, the effectiveness of 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 mandatory CSR reporting). Further tasks include holding discussions with the Board of Management on the half-year financial reports and any quarterly reports or quarterly statements to be issued prior to their publication. This committee prepares the auditor selection process and submits a reasoned proposal to the Supervisory Board regarding the appointment of the auditor. It also 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 other aspects, 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 a report on the procedure for recording related-party transactions.

2. The April meeting focused on the quarterly statement for the first quarter. The Audit Committee also dealt with the quality of the audit of the financial statements and the main areas of focus for the audit of the annual financial statements.

3. At an information event in July, the members of the Audit Committee dealt in detail with the methods and assumptions employed for the establishment of provisions in connection with the glyphosate litigations.

4. At the August meeting, the Audit Committee dealt with the half-year report and discussed at length the development of EBITDA before special items in the second quarter and the business performance and cost of capital at Crop Science. The committee also discussed the effectiveness and further development of the risk management system and the internal control system for financial reporting. Other topics included the planned implementation of new legal regulations (German Act to Strengthen Financial Market Integrity) and current developments in ESG reporting. Finally, the Audit Committee discussed the yearly report of the tax function at the meeting.

5. At its November meeting, the Audit Committee extensively discussed the quarterly statement for the third quarter and the effects of the Group structure under company law on the distributable profit of Bayer AG. Other topics were the audit planning by Internal Audit, the yearly report of the treasury function including the audit conducted pursuant to Section 32 of the German Securities Trading Act (WpHG) (EMIR), and the audit budget for the auditor of the financial statements for 2022 as well as the framework for the auditor's nonaudit services. Finally, the Audit Committee discussed the topics of data security and cyber security at the meeting.

Human Resources Committee: This committee also has 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 five occasions in 2021. 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 dealt with the appointment of Sarena Lin to the Board of Management, the extension of Stefan Oelrich's appointment to the Board of Management, the earlier-than-planned departure of Liam Condon from the Board of Management, and the appointment of Rodrigo Santos to 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 2021 and resolved to propose Dr. Fei-Fei Li and Alberto Weisser as stockholder representatives to be elected by the Annual Stockholders' Meeting following the departure of Johanna W. (Hanneke) Faber and Prof. Dr. Wolfgang Plischke.

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 management and prepares any Supervisory Board decisions. The Committee comprises the Chairman of the Supervisory Board and seven other members of the Supervisory Board, with parity of representation between stockholder and employee representatives. 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 twice in 2021.

1. At its February meeting, it discussed the status and outlook of the venture capital activities of “Leaps by Bayer”.

2. The October meeting of the Innovation Committee was chaired for the first time by Prof. Dr. Otmar Wiestler, who succeeded Prof. Dr. Wolfgang Plischke as Chairman following the latter’s departure from the Supervisory Board. The meeting focused on how the Innovation Committee would go about its work in future and on Consumer Health's innovation strategy.

Glyphosate Litigation Committee: The Glyphosate Litigation Committee was established as a nonstanding committee. The purpose of this committee was to intensively deal with the glyphosate litigations, and oversee and advise the Board of Management on related matters. The eight-member committee comprised four stockholder representatives and four employee representatives. The independent legal advisor retained by the Supervisory Board, John H. Beisner, was 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 complemented and further intensified the status reports and discussions of the glyphosate litigations that regularly take place at the meetings of the full Supervisory Board. As previously explained, the committee was dissolved at the end of 2021.

The committee held two meetings during 2021, with one in September and one in December. At each of these meetings, it dealt with court proceedings in this series of litigations that had just taken place or were imminent, including the proceedings before the U.S. Supreme Court. Other topics discussed at both meetings were the settlement programs for cases that had not yet been resolved and the core elements of the so-called self-help program, as well as the other parts of the five-point plan.

ESG Committee: The Supervisory Board established an ESG Committee with effect from the beginning of 2022 and elected Ertharin Cousin as its Chairwoman. The ESG Committee has eight members, with parity of representation between stockholders and employees. It deals with sustainable corporate governance and the company’s business activities in the areas of environmental protection, social issues and corporate governance (ESG). This mainly pertains to the way sustainability is incorporated into the business strategy; the establishment of sustainability targets; the nonmandatory ESG reporting and the auditing thereof, if applicable; the opportunities and risks; and the organizational structures and processes in ESG areas, provided the Audit Committee is not already responsible for these matters. Within its area of responsibility, the committee advises and oversees the management and prepares any Supervisory Board decisions.

Corporate governance

The Supervisory Board considered the principles of corporate governance at Bayer. In particular, at its December meeting, it dealt with the declaration of compliance with the German Corporate Governance Code and resolved to amend the rules of procedure. In addition, the Chairman of the Supervisory Board summarized at the meetings the dialogue he had with investors during investor discussions held in February 2021 and the Corporate Governance Roadshow held in November and December 2021 as well as in 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 International Financial Reporting Standards (IFRS) as endorsed by the European Union. The applicable further requirements of Section 315a of the German Commercial Code were also taken into account. 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 Professor 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 by the Board of Management 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 by the Board of Management for the use of the distributable profit, which provides for payment of a dividend of €2.00 per share and the allocation of the remaining amount to other retained earnings.

The Supervisory Board would like to thank the Board of Management and all employees for their dedication and hard work in 2021.

Leverkusen, February 25, 2022

For the Supervisory Board

Prof. Dr. Norbert Winkeljohann
Chairman

Investor Information

Disappointing share price performance despite operational success in 2021

Bayer's share price closed fiscal 2021 with an overall decline of 2.4%. Taking into account the dividend of €2.00 paid at the end of April, a slightly positive return of 1.2% was achieved. However, based on the share price performance, Bayer's stock was again one of the year's weaker performers in the DAX (+ 16%) and EURO STOXX 50 (+ 23%) stock indexes.

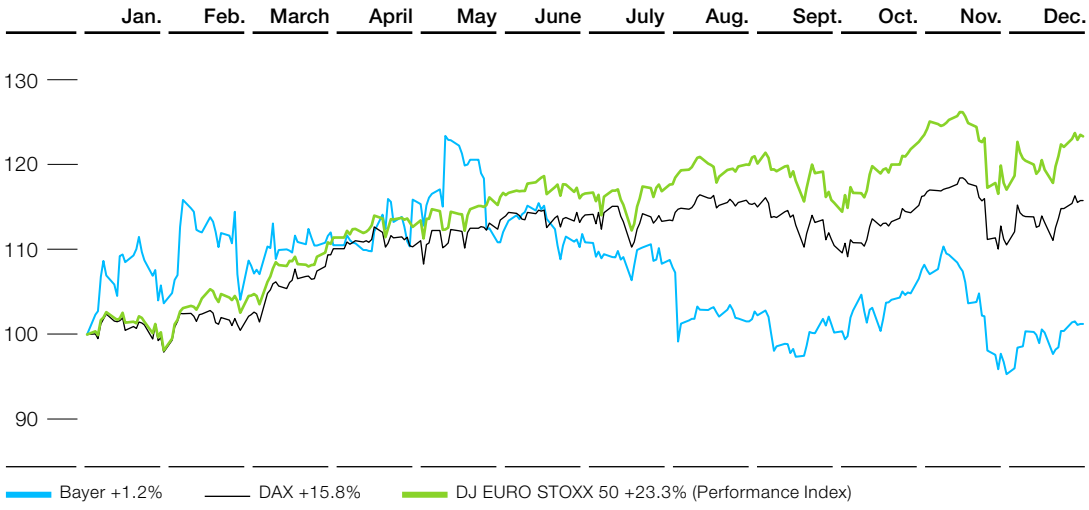
By the end of the year 2021, the share price had failed to benefit from the positive business development seen over the year as a whole and from an annual outlook that had been raised twice. Driven by the medium-term outlook and good first-quarter figures, the share price achieved above-average growth until mid-May and reached a high of €57.30. However, as of late May, the glyphosate litigation was back in the forefront and the source of uncertainty. Despite implementation of a resolution mechanism (five-point plan) as well as an increase in provisions, analysts and investors remained cautious about the share until the end of the year in view of the possible risks arising from this litigation. Closing the year at €47.00, Bayer's share price remained at a low level, even in a longer-term comparison.

Analysts gave Bayer stock a significantly higher average target price of €64.80 (as of December 2021). Of the nearly 30 analyst recommendations on Bayer stock published as of the end of 2021, 16 were positive, 11 neutral and 1 negative.[1]

1

Performance of Bayer Stock in 2021

Indexed; 100 = Xetra closing price on December 31, 2020



[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)

2

Bayer Stock Data

		2020	2021
Earnings per share from continuing and discontinued operations	€	(10.68)	1.02
Core earnings per share from continuing operations[1]	€	6.39	6.51
Free cash flow per share	€	1.37	1.44
Equity per share	€	31.22	33.76
Dividend per share	€	2.00	2.00
Year-end price[2]	€	48.16	47.00
High for the year[2]	€	78.29	57.30
Low for the year[2]	€	40.36	44.26
Total dividend payment	€ million	1,965	1,965
Number of shares entitled to the dividend (Dec. 31)	million shares	982.42	982.42
Market capitalization (Dec. 31)	€ billion	47.3	46.2
Average daily share turnover on German stock exchanges	million shares	4.2	3.3
Price/EPS[2]		(4.5)	46.2
Price/core EPS[2]		7.5	7.2
Price/free cash flow[2]		35.2	32.6
Dividend yield	%	4.2	4.3

[1] For details on the calculation of core earnings per share, see Combined Management Report, A 2.3
[2] Xetra closing prices (source: Bloomberg)

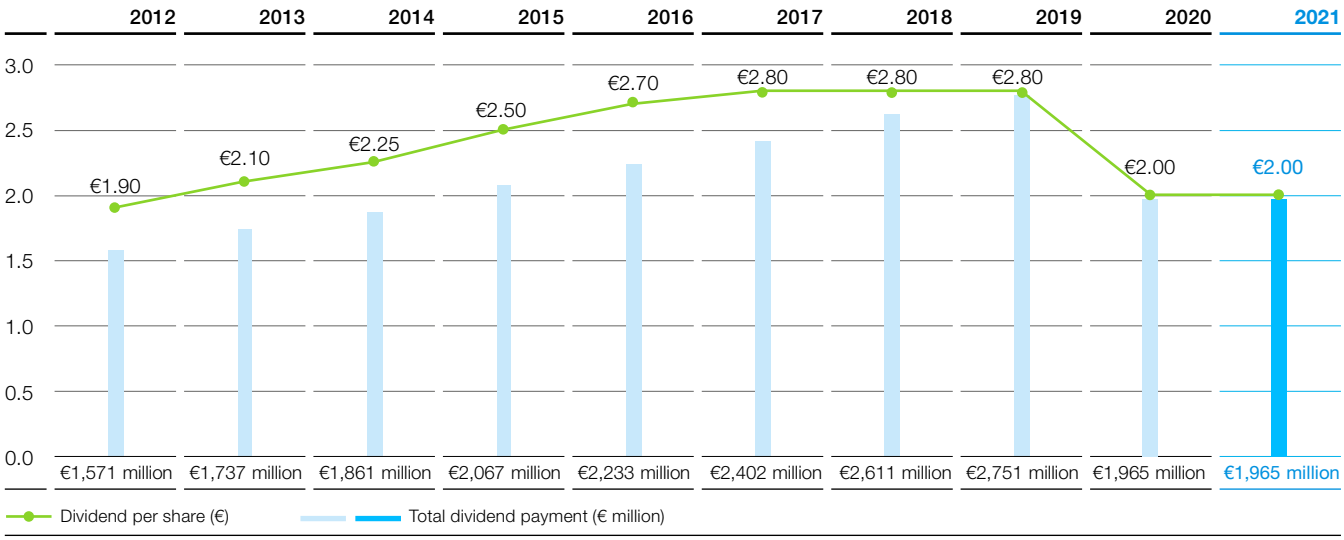
Stable dividend policy

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). The Board of Management and the Supervisory Board are proposing the payment of a dividend of €2.00 per share for 2021 (2020: €2.00 per share), which corresponds to 31% of core EPS from continuing operations of €6.51 for fiscal 2021. Based on the Bayer stock price at the end of 2021, the dividend yield is 4.3%.

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

3

Dividends Per Share and Total Dividend Payment



Bayer stock included in important indices

Bayer stock is listed on the DAX and numerous other key European indices, including the EURO STOXX 50, the FTSE Euro 100 and the S&P Europe 350. The expansion of the DAX from 30 to 40 stock corporations as of September 20 led to the expected re-weighting of Bayer securities. At the end of the year, Bayer was ranked 11th in the DAX 40 according to market capitalization. Bayer stock 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.

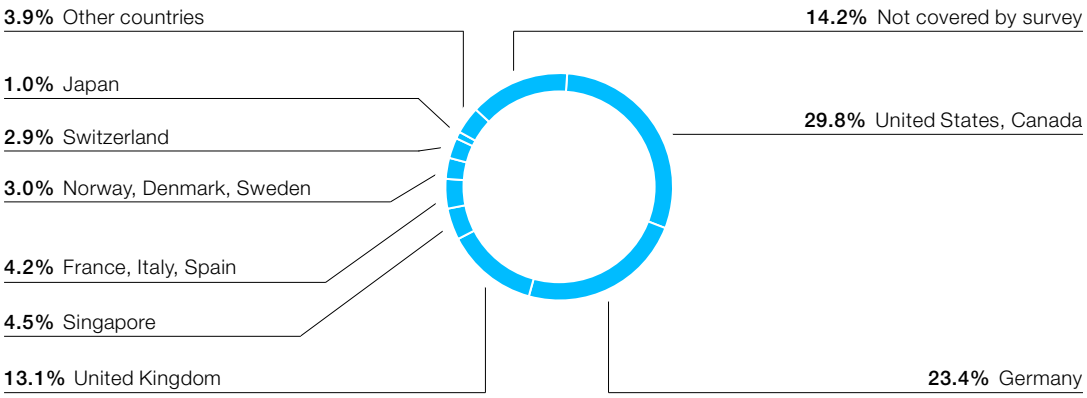
International ownership structure and further rise in stockholder numbers

According to our share register, we had approximately 627,000 stockholders at the end of 2021. This corresponds to a year-on-year increase of approximately 14%. Our company's global presence is also reflected in our international ownership structure. The biggest share of our capital stock, at 29.8%, is held by investors in North America. German-based stockholders remain a key group of investors, holding 23.4% of Bayer stock, while shareholders in the United Kingdom account for 13.1%. Irrespective of geographic distribution, some 16% of our shares are held by private stockholders. In addition, Bayer employees hold about 1% of our capital stock through participation programs.

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 adapted to COVID-19 pandemic and further expanded

During the COVID-19 pandemic, we took the opportunity to further develop our virtual formats and found innovative ways to intensify and improve the quality of our dialogue with stockholders.

In March 2021, we held our virtual Capital Markets Day. At the two-day event for investors and analysts, we provided a detailed update on our strategy and outlined the priorities of the Bayer Group and the divisions over the coming years, including the medium-term targets through 2024 and sensitivities. The discussion concerning the Pharmaceuticals and Crop Science pipelines was a further key focus.

We also offered webinars featuring Crop Science and Pharmaceuticals content for the first time through our Investor Relations website, which proved to be a successful format that we are going to continue and expand again in 2022.

As usual, we participated in a large number of conferences and roadshows that were mainly focused on Europe and North America. These events were regularly attended by members of the Board of Management and other top executives.

We consider our continuous dialogue with analysts and investors important in order to receive their input and feedback. The content of our capital market communications in 2021 focused on business development, progress with innovations, measures to mitigate legal risks, and the strengthening of our management team.

For the 2021 Annual Stockholders' Meeting, which once again had to take place in virtual form due to the ongoing COVID-19 pandemic, we provided shareholders with greater options to exercise their stockholder rights. In addition to the deadline for submitting questions being extended until one day before the Annual Stockholders' Meeting, shareholders were also able to submit follow-up questions during the event through the Stockholders' Portal. Stockholders also had the option of submitting statements in text and video form ahead of the Annual Stockholders' Meeting. These statements were published on the Annual Stockholders' Meeting website, where they could be accessed by both stockholders and the general public. In addition, videos that met specific requirements were shown during the Annual Stockholders' Meeting. The speech by the Chairman of the Board of Management and the report of the Supervisory Board Chairman were published four days before the Annual Stockholders' Meeting.

Growing interest in sustainability issues

The capital markets' interest in sustainability (environmental, social and governance, or ESG) issues continues to increase, and we responded accordingly in our continuous dialogue with institutional investors. A major focus was on our sustainability strategy and targets, climate protection and goals including the Bayer Carbon Initiative, product stewardship, biodiversity, ESG performance ratings and controversies, as well as nonfinancial targets in management compensation.

Highlights included numerous bilateral investor talks as well as regular discussions with the Climate Action 100+ investor initiative concerning our climate strategy. Moreover, we also engage in regular dialogue with important ESG rating agencies, partly to support the objective evaluation of our company and also to help us better identify improvement opportunities, and were able to substantially improve the MSCI ESG rating agency's standards-based assessment of our company last year.

Early safeguarding of liquidity at attractive conditions

Due to the rise in inflation and the expectation that central banks will scale back the emergency programs they established in response to the COVID-19 pandemic, the interest rates in both euros and U.S. dollars rose over the course of 2021. Bayer's early placement of bonds with a volume of €4 billion at the beginning of January 2021 thus came at a good time and at attractive terms for the company. 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 the company in direct conversations. The bond issuance on the following day met with substantial interest among a broad investor base and was heavily oversubscribed. The funds raised were mainly used to repay a loan ahead of schedule, and we also redeemed maturing bonds of US$4.5 billion, €750 million and JPY10 billion over the course of the year.

In addition, we successfully divested the remaining shares in Elanco Animal Health Inc. during the first half of 2021.

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, 2021, 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. 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 also appear 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, 2021, to December 31, 2021, 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, as well as the section on the EU Taxonomy, which were reviewed on a limited assurance basis in 2021. Our information on Scope 3 emissions was also subject to a limited assurance review. The Compensation Report was prepared on the basis of the stricter requirements arising from the act transposing the second EU Shareholder Rights Directive into German law (ARUG II), and was subject to a reasonable assurance review. In addition, the Compensation Report will now appear for the first time in a separate chapter outside of the Management Report. The declaration of compliance with the German Corporate Governance Code has 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, 2021

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 healthcare 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. In line with our vision "Health for all, hunger for none", we aim to put an end to hunger and help 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. Innovation, growth and sustainability are integral parts of our strategy, while our corporate values of **L**eadership, **I**ntegrity, **F**lexibility and **E**fficiency, or LIFE for short, lay the foundation for the way we operate. These values shape our culture and ensure a common identity throughout the Bayer Group.

1.1.2 Corporate Structure

Corporate structure as of December 31, 2021

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.

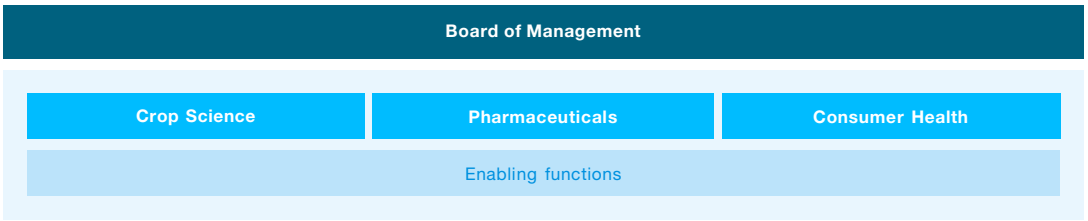
The following structural changes occurred within our organization in 2021:

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, 2021, she became Chief Transformation and Talent Officer, assuming responsibility for Human Resources, Strategy and Business Consulting. Lin also took on the role of Labor Director on the same date.

Liam Condon stepped down from the Board of Management on December 31, 2021. He was succeeded by Rodrigo Santos, who was appointed to the Board of Management effective January 1, 2022, and became head of the Crop Science Division.

A 1.1.2/1

Bayer Group Structure in 2021



Our divisions are active in the following areas:

Crop Science is the world's leading agriculture enterprise, with businesses in crop protection, seeds and traits, 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 healthcare, and on specialty therapeutics focused on the areas of oncology, hematology, ophthalmology and, in the medium term, cell and gene therapy. We have established a strategic unit for cell and gene therapy spanning the entire value creation chain – from research and development to marketing and patients. The division also comprises the radiology business, which markets diagnostic imaging equipment and digital solutions 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, 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. Our Leaps by Bayer unit, which invests in disruptive innovations, also forms part of the enabling functions.

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, VTPRO4™, Vitala™
Soybean Seed & Traits	Seeds and traits for soybeans	Asgrow™, Intacta RR2PRO™, Intacta 2 Xtend™, 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™, Delaro Complete™, Prosaro™
Insecticides	Biological and chemical products to protect crop plants from harmful insects and their larvae	BioAct™, Confidor™, Movento™, Sivanto™, Vayego™, Velum/Verango™, Vynyty Citrus™
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™ 3 XtendFlex™, Deltapine™, TruFlex™
Pharmaceuticals		
Cardiology	Hypertension, pulmonary hypertension, heart attack and stroke, thrombosis, coronary artery disease (CAD), peripheral artery disease (PAD), symptomatic chronic heart failure, chronic kidney disease and type 2 diabetes	Xarelto™, Adalat™, Aspirin™ Cardio, Adempas™, Verquvo™, Kerendia™
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.

Our company has a global footprint. As of December 31, 2021, the Bayer Group comprised 374 consolidated companies in 83 countries.

A 1.1.2/3

Selected Bayer Sites in 2021

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

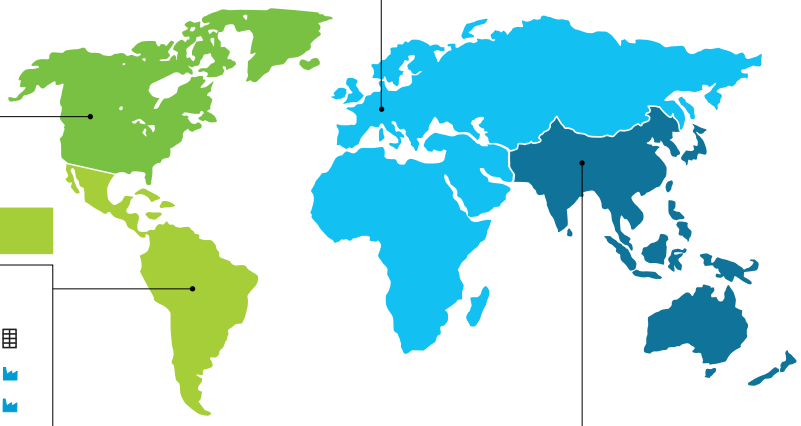
Norway
- Oslo — PH

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
- Saxonburg — PH
- Soda Springs — CS
- St. Louis — CS
- Whippany — CH | PH
- 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

Sustainable, profitable growth in focus

Innovative business activities support “Health for all, hunger for none” vision

Ambitious sustainability targets for the entire Group

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 healthcare 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, growth and sustainability go hand in hand. In short, we are working to make our vision “Health for all, hunger for none” a reality. Our strategy operationalizes our vision, as we look to achieve long-term profitable growth and make a positive contribution to society and the environment.

We focus on four strategic levers:

// We develop **innovative products and solutions** and leverage cutting-edge research to address unmet societal challenges. We are also continuing to drive the digitalization of our entire value chain.

// We drive the **operational performance** of our business by optimizing our resource allocation and cost base.

// **Sustainability** is an integral part of our business strategy, operations and compensation system. Through our businesses, we contribute significantly to the United Nations’ Sustainable Development Goals (SDGs). We also pursue resolute, science-based climate action along our entire value chain.

// 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 businesses 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

The landscape is changing in agriculture: Increased pressures due to climate change combined with a growing population have created a pivotal moment in how our customers provide food, fuel and fiber for a world that needs to learn to live within planetary boundaries. These challenges have spurred rapid, disruptive changes in the industry, intensifying competition across the value chain, creating new players and opening up new sales opportunities.

In this dynamic environment, the differentiators are clear: the speed and scale of innovation and a focus on sustainable results for our customers. With a leading innovation pipeline, a deep digital ecosystem informing our growers and our research and development (R&D) capabilities, and a multitude of partnerships that accelerate the availability of new technologies, we are currently the market leader and are also very well positioned moving forward.

Our mission is to transform agriculture and drive a more sustainable food system through a farmer-centric, outcomes-based and digitally enabled approach. Our overall goal is to grow faster than the market and deliver superior returns than our competitors. In addition, we aim to achieve digitally enabled sales by the end of the decade.

In the near term, we are leveraging the positive market momentum driven by favorable commodity prices and further accelerating our strong performance across regions. We continue to invest in the backbone of our business: customer-focused innovation in seeds, traits, crop protection and digital solutions.

Our on-farm connectivity continues to create faster innovation, drive more customized solutions for farmers, automate processes and increase the productivity of our R&D pipeline. We are digitally connecting farms, optimizing input use and creating an industrywide ecosystem aimed at unlocking new income streams for our customers and our own business by pioneering new business models with sustainability at their core.

As part of these endeavors, we pursue ambitious sustainability targets: reducing the environmental impact of Bayer's crop protection by 30% globally, decreasing field greenhouse gas emissions by 30% in the most emitting cropping systems that we serve, and improving the livelihoods of 100 million smallholders.

Supported by our digital application FieldView™, the Bayer Carbon Initiative rewards farmers for adopting climate-smart practices, sequestering carbon at scale and creating new on-farm revenue streams. Since its launch in July 2020, the initiative has been scaled in the United States, and pilots have also been initiated and further developed in Brazil, the EU, India and Australia.

Smallholder farmers are both a fast-growing market that we are committed to serving and a critical lever for global poverty reduction. That's why we continue to expand the Better Life Farming program, with around 1,600 centers open for small farmers in India, Bangladesh and Indonesia.

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 healthcare is delivered, while cell and gene therapy has the potential to cure severe diseases.

We are helping to drive medical progress through our focus on researching, developing and marketing innovative medicines. Our near-term growth is driven by key products, such as Xarelto™ and Eylea™, while our near- and mid-term growth will be further fueled by launch products, such as Nubeqa™, Verquvo™ and Kerendia™, and late-stage R&D pipeline candidates, such as elinzanetant. To safeguard long-term growth, we continue to invest in R&D in therapeutic areas with a substantial need for innovation.

We are continuously strengthening our technology platforms. Building on our acquisitions of the U.S. companies BlueRock Therapeutics LP, and Asklepios BioPharmaceutical, Inc. (AskBio), we are further expanding our cell and gene therapy activities. In addition, the recent acquisition of Vividion Therapeutics, Inc., United States, strengthens our drug discovery capabilities with a chemoproteomics platform. Vividion's approach identifies previously unknown binding pockets in undruggable targets to generate novel compounds. We are also enhancing our technological capabilities through the targeted expansion of our digital R&D infrastructure. 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.

In Oncology, we are continuing to build our integrated Research & Early Development organization.

In addition, we are investing in the One Drop digital platform and in developing digital solutions, such as our Radiology Calantic™ platform that will embed artificial intelligence solutions in radiology.

We also pursue ambitious sustainability targets. 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. In addition, we remain committed to combating neglected tropical diseases and noncommunicable diseases.

Consumer Health

Rising healthcare costs, changing demographics and increasing health awareness of consumers continue to make self-care more relevant, and are expected to continue to fuel attractive long-term growth of the consumer healthcare market. The pandemic has further raised awareness about the importance of self-care, driven increased consumption in categories like nutritional supplements, and accelerated channel shifts toward e-commerce.

We provide consumers with products, services and information that empower them to improve their everyday health. Our strategy focuses on our core categories, as well as the transition of prescription medicines to nonprescription status. Our profitable growth is driven by world-class, science-based innovation with our trusted, consumer-preferred brands as well as new product launches. We are also continuously driving cost and cash productivity across the entire value chain.

We continue to digitalize all areas of our operations, in marketing, sales, supply chain and R&D to engage better with consumers, customers and healthcare professionals while driving productivity, flexibility and resilience. We leverage an agile innovation model and collaborate with external partners to provide consumers with innovative solutions that best address their everyday health needs. Through acquisitions and partnerships, we have gained access to new business models and capabilities to provide personalized diagnostics and treatment solutions.

We pursue ambitious sustainability targets. By 2030, we aim to expand access to self-care for 100 million people in underserved[1] communities. We are executing this ambition by fully embedding sustainability across our operations to offer solutions that best serve consumers, in particular those for whom self-care is the primary form of care, while reducing our CO_2 emissions and overall environmental footprint.

[1] Economically or medically

Climate action and decarbonization

We have a far-reaching decarbonization program in place across the company, contributing in this way to meeting the target of limiting global warming to 1.5°C. The targets and measures we pursue as part of our decarbonization program have been confirmed by the Science Based Targets initiative. To support this transformation, we launched a pilot project in 2020 and implemented an internal CO_2 price of €100 per metric ton when calculating our capital expenditure projects. To reduce emissions by more than 42% by the end of 2029 compared with the 2019 baseline, we are implementing energy efficiency measures at our sites, and are aiming to purchase 100% of our electricity from renewable sources. We have committed to becoming carbon-neutral in our own operations by 2030 by offsetting all other emissions through the purchase of certificates from certified climate protection projects that satisfy externally recognized quality standards. One step toward that goal is our joining of the LEAF (Lowering Emissions by Accelerating Forest finance) Coalition, one of the largest public-private partnerships for protecting tropical forests. 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 compared with the 2019 baseline. The aforementioned in-field decarbonization efforts of our Crop Science Division and its innovations to enhance climate resilience supplement these commitments and should make significant contributions in the value chains of the agricultural industry.

We will continue to forge ahead with decarbonization after 2030, too. 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.

We advocate a scientifically sound climate policy in line with our ambitious climate goals. To ensure immediate transparency, we publish the Industry Association Climate Review. The report shows the positions of our industrial associations on climate policy toward our own climate goals. We make it clear where positions coincide and where they differ from one another, allowing us to take measures to close these gaps.

Targets and key performance indicators

To advance and measure the implementation of our strategy, we have set ambitious Group targets.

A 1.2.1/1

Financial Group Targets

Target (based on closing rates as of Sept. 30, 2021)	Target attainment in 2021	Target for 2022 (currency-adjusted)	Target for 2022 (at closing rates)
Group sales (Fx & p adj. change); Revised 2021 outlook: increase by approx. 7% (Fx & p adj.) to approx. €43 billion	€44.1 billion +8.9%	approx. €46 billion Fx & p adj.: approx. +5%	approx. €47 billion Fx & p adj.: approx. +5%
EBITDA margin before special items; Revised 2021 outlook: approx. 25.5%	25.4%	approx. 26%	approx. 26%
Core earnings per share; Revised 2021 outlook: approx. €6.10 to €6.30	€6.51	approx. €7.00	approx. €7.10
Free cash flow; Revised 2021 outlook: approx. minus €0.5 billion to minus €1.5 billion	€1.4 billion	approx. €2.0 to 2.5 billion	approx. €2.0 to 2.5 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 2022.

A 1.2.1/2

Nonfinancial Group Targets Through 2030

Target[1]	Base year 2019	2020	2021	Target for 2030
Number of smallholder farmers in low- and middle-income countries (LMICs) supported by products, services and partnerships	42 million	45 million	49 million	100 million
Number of women in low- and middle-income countries (LMICs) who have their need for modern contraception satisfied due to interventions supported by Bayer	38 million	40 million	41 million	100 million
Number of people in underserved[2] communities whose self-care is supported by interventions from Bayer	41 million	43 million	46 million	100 million
Scope 1 and 2 greenhouse gas emissions[3] (million metric tons of CO_2 equivalents)	3.76	3.58	3.17	42% decrease [4, 6]
Scope 3 greenhouse gas emissions from relevant[7, 8] categories (million metric tons of CO_2 equivalents)	8.82	8.22	8.16	12.3% decrease [5, 6]
Off-setting of remaining Scope 1 and 2 greenhouse gas emissions (million metric tons of CO_2 equivalents)	0	0.20	0.30	100%

[1] A more detailed description of the calculation methodologies is published on our website www.bayer.com/en/sustainability
[2] Economically or medically
[3] Covering Scope 1 and 2 emissions (market-based) of sites that have an energy consumption in excess of 1.5 terajoules
[4] Corresponding to the sustainability target of limiting global temperature rise to 1.5°C above pre-industrial level
[5] Corresponding to the sustainability target of limiting global temperature rise below 2°C above pre-industrial level
[6] By the end of 2029
[7] 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
[8] The figures for 2019 and 2020 had to be corrected as new information came to light in the categories 3.1, 3.2 and 3.4. This encompassed the integration of price and currency effects and the correction of transportation data.

In our **Crop Science** Division, we support smallholder farmers by supplying high-quality seeds and crop protection products, technologies and services. In 2021, together with the Bill & Melinda Gates Foundation, the Bayer Foundation began supporting Mercy Corps AgriFin's Digital Farmer II program, which is aimed at providing smallholder farmers in Africa with access to digital offerings, such as information and financial products and services, through 2025. In 2021, we supported 49 million smallholder farmers[2] (2020: 45 million smallholder farmers) in low- and middle-income countries.

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. Alongside product sales, we are also engaged in partnerships with the Bill & Melinda Gates Institute at Johns Hopkins University as part of "The Challenge Initiative" and in a national UNFPA project in Egypt. The partnership programs we support help numerous women in Asia and Africa to gain access to modern contraception, irrespective of the method or manufacturer. In 2021, we were able to increase the number of women reached to 41 million (2020: 40 million).

In our **Consumer Health** Division, we are also making our products accessible to low-income consumers, with a focus on availability and affordability. At the same time, we are also enhancing our product portfolio for these consumer groups 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, donating products and promoting health education. We also advocate for access to basic healthcare worldwide, by leveraging our scientific expertise and our global network. Our partnership with Vitamin Angels, which began in 2021, improved access to micronutrients for underserved pregnant women and their unborn babies in 13 countries.

[2] The calculation method for vegetable seeds was simplified, but this had no impact on global reach.

Through these efforts, we were able to reach 46 million people[3] in 2021 (2020: 43 million). We augmented our commercial reach on a like-for-like basis, but this increase was canceled out by a change in consumer behavior. These figures are relevant for Board of Management compensation in 2024. In addition, we successfully integrated our consumer business in India, which had previously been run via a third party, into our own organization as part of our growth strategy. In India, we were already able to reach an additional 13 million people in 2021, pushing the overall total up to 59 million. The figures for India are presented separately.

As part of our **climate strategy**, we reduced Scope 1 and 2 greenhouse gas emissions by 0.41 million metric tons of CO_2 equivalents (–11.5%) year on year in 2021, mainly due to a greater share of electricity being purchased from renewable energy sources. We also offset 0.30 million metric tons of CO_2 equivalents through external projects. In the Scope 3 Science Based Targets (SBT) categories that are relevant for our company, we reduced emissions by 0.05 million metric tons of CO_2 equivalents (–0.6%) compared with the prior year. The slight decline in these Scope 3 emissions was largely due to our operational procurement activities.

EU taxonomy

Our sustainability targets (Chapter 1.2.1) help us to realize our vision of “Health for all, hunger for none.” In addition, we also report on other nonfinancial aspects. In accordance with Article 8 of Regulation (EU) 2020/852 of the European Parliament and of the Council of June 18, 2020, on the establishment of a framework to facilitate sustainable investment, in conjunction with the delegated acts of June 4, 2021, and of July 6, 2021, we are required for the first time to report on the nature and scale of sustainable economic activities in accordance with the EU taxonomy classification system.

Under Article 8 of Taxonomy Regulation (EU) 2020/852 and Article 10 of the supplementary delegated act of July 6, 2021, simplified reporting requirements were in effect for 2021, with companies required to disclose the proportion of their business activities that is EU taxonomy-eligible in three defined indicators: turnover (sales), capital expenditure (CapEx), and operating expenditure (OpEx).

Under Article 1, No. 5 of the delegated act of July 6 supplementing Regulation (EU) 2020/852, economic activities can only qualify as taxonomy-eligible if they have been defined in Annexes I and II to the delegated act of June 4, 2021, and comply with the technical screening criteria defined for the two climate-related environmental objectives (climate change mitigation and climate change adaptation) to determine conformity with the EU taxonomy. Activities that are not defined in these two Annexes or economic activities that are not aligned with the description of activities are deemed taxonomy non-eligible. This means that, while our own sustainability targets can be regarded as an additional contribution to sustainability, they do not fall under the EU taxonomy.

We compared our business activities against the activities defined in Annexes I and II of the delegated act of June 4 across our businesses, including our Crop Science, Pharmaceuticals, and Consumer Health divisions. Although we have not classified any of our core business activities as taxonomy-eligible, we have identified relevant cross-cutting activities. Where these cross-cutting activities are aligned with the activity description, we have recorded them as taxonomy-eligible.

[3] The calculation method was modified due to updated information in 2021 that primarily pertained to the financial vulnerability of the lower middle class due to COVID-19. The income threshold was increased from up to US$10 per day to US$15 per day in low- to middle-income countries, while the income threshold in high-income countries was changed to US$20 per day. In addition, new information about the purchasing behavior of people with low incomes resulted in a change in the relevant products selected. Neither of the modifications to the methodology resulted in a significant change in the overall figure in 2021 or the prior years.

In addition, our analysis concluded that none of our sales-generating activities currently fall within the EU taxonomy.

We were also unable to identify any significant taxonomy-eligible operating expenditure (OpEx). Our operating expenditure with respect to research and development expenses and maintenance work amounted to €6,757 million in 2021.

Our 2021 capital expenditure (CapEx) according to the substantive requirements for this indicator based on the EU Taxonomy Regulation is outlined below. Following detailed analysis, we classified the noncapitalizable costs within the capital expenditure projects as immaterial.

Reporting on capital expenditure
Capital expenditure in the reporting year comprised investments in tangible and intangible assets before depreciation, amortization, impairments, and remeasurements. Also included were investments in tangible and intangible assets due to business combinations. For further details, see Notes [14] and [15].

The data was collected via project controlling and the corresponding project structures, based on the total capital expenditure amount. All major projects relating to tangible and intangible assets were reviewed to ascertain their taxonomy eligibility and classified in accordance with the activities of EU taxonomy. The detailed analyses were conducted by the departments of the respective business units to ensure correct allocation. The total capital expenditure identified as being taxonomy-eligible within the meaning of EU taxonomy is shown in the following table:

A 1.2.1/3

Taxonomy Capex Reporting

Economic activities € million	Absolute CapEx	Proportion of CapEx
Taxonomy-eligible economic activities		
Installation and operation of electric heat pumps	2.8	0.1%
Construction, extension and operation of wastewater collection and treatment	6.4	0.2%
Renewal of wastewater collection and treatment	6.0	0.2%
Transport by motorbikes, passenger cars and light commercial vehicles	5.7	0.2%
Renovation of existing buildings	109.3	3.5%
Installation, maintenance and repair of energy efficiency equipment	90.0	2.9%
Installation, maintenance and repair of instruments and devices for measuring, regulation and controlling energy performance of buildings	0.2	0.0%
Acquisition and ownership of buildings	55.7	1.8%
CapEx taxonomy-eligible economic activities (total)	**276.1**	**8.8%**
Taxonomy non-eligible economic activities	**2,849.9**	**91.2%**
Total	**3,126.0**	

We incurred EU taxonomy-eligible capital expenditure (CapEx) of €276.1 million in 2021. Taxonomy non-eligible capital expenditure amounted to €2,849.9 million. The proportion of taxonomy-eligible capital expenditure therefore amounted to 8.8%. The taxonomy-eligible capital expenditure primarily included three taxonomy activities. Under "**Renovation of existing buildings"**, capital expenditure of €109.3 million was incurred. This was mainly attributable to our Pharmaceuticals Division, and pertained to our IUS facility in Turku, Finland, for example. Under "**Installation, maintenance, and repair of energy efficient equipment"**, capital expenditure of €90.0 million was incurred. This was largely attributable to our Pharmaceuticals Division, and primarily related to the installation of new heating, ventilation and air-conditioning systems. Furthermore, under "**Acquisition and ownership of buildings"**, capital expenditure of €55.7 million was incurred, for example for the Leadership in Energy and Environmental Design certified office building at our Pharmaceuticals site in Cambridge, United States. In addition, there were smaller capital expenditure measures in electric heat pumps, wastewater systems, means of transport and energy-efficient equipment totaling €21.1 million.

1.2.2 Sustainability Management

Sustainability is one of our strategic levers. That means that our business activities are systematically geared toward generating a positive impact for people and the planet. Effective sustainability management throughout the organization is ensured by clearly defined roles and responsibilities. The Chairman of the Board of Management in his capacity as Chief Sustainability Officer (CSO) and the entire Board of Management hold first-level responsibility for this strategy. An external Sustainability Council advises the Board of Management on all matters relating to sustainability and offers a critical-constructive perspective. They are supported by the Public Affairs, Science and Sustainability (PASS) organization, which identifies risks and opportunities, develops strategies, and defines sustainability management targets and guidelines. It also provides governance for all sustainability topics. Sustainability management is integrated into the existing management and governance structures and the core processes of the entire organization.

See Sustainability Report for more detailed information

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 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 covers the following key areas of activity:

www.bayer.com/materiality

// Innovation
// Access to healthcare
// 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 seek dialogue from the outset in strategic decision-making processes regarding new projects such as investment projects and launches of new products.

Respect for human rights

Observing human rights is fundamental to the way we operate. We fully respect and promote human rights and have documented our stance in a globally binding corporate policy entitled the Bayer Human Rights Policy. We further developed our human rights strategy in 2021 and are in the process of updating our human rights policy. A draft version of this policy is currently being checked against the requirements arising from the German Supply Chain Due Diligence Act, which serves as our basis in this respect. Once we have completed this review, both the human rights strategy and updated policy will come into effect in 2022.

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

We take steps to ensure human rights are respected both within our own company and along our entire value chain. Corporate policies, processes, and management and monitoring systems are in place to govern the implementation of human rights standards.

We offer special training programs to enhance employees' awareness of the importance of human rights in their day-to-day activities, and in 2021 also launched a specific human rights training program. Around 86% of our employees received training in aspects of our Human Rights Policy in 2021. 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. International Covenants on Civil and Political Rights and on Economic, Social and Cultural 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. See the Opportunity and Risk Report for the risk status identified for this area in 2021. We did not identify any potentially negative effects that were reportable under the CSR Directive Implementation Act.

Charitable giving and foundations

Together with our network of leading partners, such as the Bayer foundations and other non-profits, we support social impact projects in the areas of health, nutrition, science and environment, and community engagement. Responding to disasters by providing humanitarian aid also plays a crucial role in our social commitment. Through our disaster relief programs, we support communities affected by natural disasters and public health crises.

In 2021, we provided around €42 million in charitable donations and social impact programs worldwide. In addition to the financial contributions, products costing around €17 million were donated to organizations in countries and communities in need. 63% of our contributions (cash and products) went to low- and middle-income countries. In 2021, we conducted more than 400 social projects worldwide with partner organizations, including the Bayer foundations (Bayer Cares Foundation, Bayer Science & Education Foundation, Bayer Fund (US) and Bayer Foundation India), which generate an important impact for society in line with our vision and corporate purpose.

In countries where we are present, the contributions we make to support social causes – in the form of monetary, product or other in-kind donations – are governed by our global "Corporate Charitable Giving Procedure," which was revised in late 2020. It establishes clear criteria for recipient eligibility and project selection, and also sets forth the strategy we follow to generate long-term impact for society in line with our purpose, vision and sustainability goals. Our charitable donations are recorded and approved centrally, which provides a transparent overview of our contributions to support social causes around the world.

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. 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 (STI). 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: 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. It also forms part of our long-term stock-based cash compensation (LTI).

Total shareholder return

We aim to create shareholder value and thus deliver attractive returns 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 our long-term stock-based cash compensation (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. The IMS therefore plays a key role in safeguarding our company's license to operate.

1.3 Focus on Innovation

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 new approaches in our process, service and business models. We also focus on social innovation to improve living conditions for people in developing countries and disadvantaged individuals in our society.

The results of our research and development 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.

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.

We maintain a global network of R&D locations, which employ roughly 15,300 Bayer employees. In 2021, our research and development spend before special items amounted to €5,326 million (2020: €4,884 million).

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 in step with our vision “Health for all, hunger for none.”

We are increasingly employing data science methods in the R&D projects of our three divisions, strategically coordinated by the cross-divisional Digital Transformation Board (DTB) established in 2020.

In 2021, we continued to invest in R&D and pursued targeted programs to further strengthen our innovation capabilities on the basis of a number of strategic decisions. Notable examples in view of their far-reaching importance include the further expansion of cell and gene therapy in the Pharmaceuticals Division and the sustainable agriculture program in the Crop Science Division. The development portfolio for Bayer’s cell and gene therapies already comprises seven candidates at different stages of advanced clinical development. They cover various therapeutic areas with a high unmet need such as neurodegenerative, neuromuscular and cardiovascular indications, and include leading programs for Pompe disease and Parkinson’s disease, hemophilia A and systolic heart failure.

The decarbonization program launched by the Crop Science Division in 2021 is in line with the political objectives of the EU Green Deal and our sustainability commitments. The main goal is to fight climate change by establishing more climate-friendly cultivation methods. Bayer will work together with farmers and experts from the food value chain in a virtual carbon farming laboratory to jointly test innovative methods and gain insights.

2021 also saw the launch of a new cross-divisional initiative, the Bayer Science Collaboration Explorer, to strengthen public trust in our innovations, scientific processes and R&D organization. This initiative is aimed at creating more transparency over Bayer’s scientific collaborations.

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 and thus also make an important contribution to the Sustainable Development Goals of the United Nations. The framework established for the adoption of new activities is defined by the ten “leaps”:

https://leaps.bayer.com/approach#10leaps

// Cure genetic diseases
// Provide sustainable organ and tissue replacement
// Reverse autoimmune diseases and chronic inflammation
// Replace destroyed tissue
// Prevent and cure cancer
// Reduce the burden of agriculture on the environment
// Use the microbiome to heal
// Develop sustainable protein supply
// Stop disease transmission by insects
// Develop revolutionary digital concepts

The Leaps by Bayer portfolio comprised investments in more than 50 biotech start-ups in 2021.

Examples of the activities of Leaps by Bayer in the area of healthcare in 2021 included the development of innovative therapeutic approaches to treat cancer and autoimmune diseases by modulating T-cells and T-cell receptors, and the development of methods to diagnose and treat chronic inflammatory diseases. These measures led to the addition of Edifice Health, Inc., United States, to the Leaps by Bayer portfolio.

The development of an artificial intelligence (AI)-based care navigation platform is geared toward analyzing disease symptoms faster and better and enabling personalized treatment. To this end, we are collaborating with Ada Health GmbH, Germany, to further advance that company's proven health analysis technologies for symptom analysis. Together, we aim to combine medical knowledge with powerful artificial intelligence to create new possibilities for personalized healthcare. Ada's technology can help shorten time to diagnosis, thus addressing one of the biggest challenges in guiding consumers and patients to appropriate care.

In the agricultural sector, our activities focused on precision agriculture through digital farming, for example in collaborations with Guardian Agriculture, United States, and EarthOptics, United States; and on innovative plant breeding through the use of gene editing in collaboration with Amfora, Inc., United States. Joyn Bio, our joint venture with the start-up company Ginkgo, United States, is working on leveraging the soil microbiome for optimum plant growth and protein content in crops. Further collaborations involving utilization of the soil microbiome were also initiated with Sound Agriculture Co., United States, and Andes Ag. Inc., United States, in 2021.

Sound Agriculture Co. is concentrating on two novel technology platforms that leverage plant and soil biology to significantly improve food production. The first is an on-demand breeding platform that enables plant traits to be developed 10 times faster than current technologies. The second is a nutrient efficiency platform poised to replace 30% of global nitrogen fertilizer use through patented technology that allows crops to access more nutrients. Andes has developed a novel seed treatment technology for seamlessly integrating seeds with a select library of microbes that colonize the seed's root structure. This kick-starts a process known as biological nitrogen fixation. We are helping Andes to expand its current product range and explore the possibilities offered by revolutionary technologies such as soil-based carbon capture.

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 and risks 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 invest the profits sustainably in 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 enable farmers to achieve higher productivity in a sustainable manner. Our R&D organization comprises approximately 7,300 employees (2020: 7,100)[4] operating in more than 60 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.

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 sustainably increase agricultural productivity while better protecting natural resources. Using a targeted approach, we focus on bringing together our expertise across the following disciplines to deliver innovation faster.

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 novel seed products. In this context, we opened our product design center in Petrolina, Brazil, in 2021 to accelerate the development of corn and soybean products for the country's domestic market.

Biotechnology and **genome editing** tools allow 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 new, 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, as this contributes to finding improved solutions for our customer's needs and achieving our sustainability targets.

Our approach in **biologicals** encompasses a focus on microbial organisms and materials derived from them. We are continuing to realign our activities in this field 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 digital farming platform, we have insight into field-specific information that enables us to use novel modeling to make custom product recommendations tailored to each individual plot. With these insights we are able to maximize the value of our seed and chemistry portfolio for farmers, as well as lead Bayer toward digitally enabled business models and new opportunities for growth.

[4] Including permanent and temporary employees

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[5] that are scheduled to be launched by 2024.

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
	2023	Breeding/native trait	Crop efficiency/yield	Short Stature Corn
	Annual	Breeding/native trait	Crop efficiency	> 150 new corn seed hybrids
Soybeans	Annual	Breeding/native trait	Crop efficiency	> 150 new soybean seed varieties
Cotton	2023	Biotechnology trait	Pest management	ThryvOn Technology
	Annual	Breeding/native trait	Crop efficiency	> 10 new cotton seed varieties
Crop Protection	2022	Crop protection	Disease management	Xivana (fluoxapiprolin)
	2022	Crop protection	Disease management	Fox Supra (indiflin)[2]
	2024	Crop protection	Pest management	Plenexos (spidoxamat)
	Annual	Biological/small molecule LCM	Crop efficiency, disease, pest and weed management	~ 7 new formulations of crop protection products between 2022 – 2024
Vegetables	Annual	Breeding/native trait	Crop efficiency, disease management	> 90 new seed varieties launched
Digital applications	2022	Digital	Crop efficiency	Seed Advisor tool within FieldView™ enabling seed placement and density recommendations for North American corn growers
	2023	Digital	Disease management	Fungicide timing recommendations for European wheat growers
	2024	Digital	Disease management	Early season fungicide recommendations for North American corn and soy growers

As of December 2021
[1] Planned market launch of selected new products, subject to regulatory approval
[2] Co-development with Sumitomo

In 2021, we launched confirmatory technical proof-of-concept field studies for three new small-molecule or biological active ingredients and plant traits[6]. For 2022, 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 2021 (examples)

The next generation of herbicide tolerance in soybeans was launched in 2021 with XtendFlex™ soybeans. The trait offers tolerance to glyphosate, dicamba and glufosinate herbicides. The Roundup Ready™ Xtend Crop System provides soybean growers with industry-leading yield and very good weed management options.

Serenade™ Soil Activ, our new biological option, has been available since the beginning of 2021. This new product offers farmers ease of use with lower application rates and is designed to extend our business in growth markets. It was launched in the United States in 2021, and other countries are set to follow in the years ahead.

[5] 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.
[6] A new plant trait is a specific characteristic that has not yet been available or offered at Bayer for the crop plant in question.

Intacta 2 Xtend™ soy, which has gained all regulatory approvals, was successfully introduced in Brazil for the 2020/2021 growing season. This enhancement of the Intacta™ franchise will support farmers in South America with multiple modes of action for insect control.

VTPro4™ corn was launched for the 2021/22 growing season in Brazil and Argentina having received all necessary regulatory approvals. This new stacked offering includes an additional mode of above- and below-ground insect control to combat evolving resistance.

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[7] 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. Fluopyram is patent-protected until 2024 in the United States and 2025 in Brazil.[8] Tetraniliprole has patent protection until 2029 in Germany, France, the United Kingdom, Brazil, Canada and other countries, and in the United States its patent protection extends until 2030. 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, 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 2021, we entered into many new research partnerships, including those detailed below.

In April, we partnered with RAGT Semences, France, to jointly develop hybrid wheat varieties to meet the evolving needs of farmers in Europe. This partnership combines Europe's leading soft wheat genetics with access to the latest breeding methodologies, seed production systems and advanced digital solutions.

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

In October, we expanded our collaboration with AbacusBio Limited, New Zealand, in the area of predictive plant breeding to include row crops across broader geographies and, for the first time, various vegetable crops. Through computational integration of economic, grower preference and socio-economic data, AbacusBio's technology can help improve predictions of how products will meet market needs.

In November, we entered into a collaboration with Sound Agriculture Co., United States, to advance a novel technology platform that leverages plant biology to improve food production. Sound's on-demand breeding platform offers a paradigm shift in breeding.

In November, we announced a partnership with Microsoft Corp., United States, to build a new cloud-based set of digital tools and data science solutions for use in agriculture and adjacent industries. The partnership is expected to bring new infrastructure and foundational capabilities to accelerate innovation, boost efficiency and support sustainability across value chains for food, feedstuffs, fuels and textile fibers.

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

A 1.3/2

Important Collaborations at Crop Science

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
Andes Ag, Inc.	Andes' process integrates microbes that colonize a seed's root structure, starting biological nitrogen fixation, and enabling the crop to draw down nitrogen from the air. This will contribute to the reduction of additional field inputs and ag-associated greenhouse gas production.
Arvinas Inc.	Oerth Bio LLC (joint venture of Bayer & Arvinas, Inc.) to utilize Arvinas' targeted protein degradation technology PROTAC® to develop innovative new agricultural products to improve crop yields
BASF SE	Co-funded collaboration agreement to develop transgenic products with increased yield stability in corn and soybeans
Berkeley Lights Inc.	Accelerate and expand the discovery of novel traits by developing and performing high-throughput functional screening workflows.
Brazilian Agricultural Research Corporation – Embrapa	R&D cooperation to address specific agricultural challenges in Brazil, e.g., Asian soybean rust and soil carbon dynamics
2Blades Foundation	Collaboration research program to identify Asian soybean rust resistance genes in legumes and other genes to control this important fungal disease in soybeans
Citrus Research Development Foundation, Inc.	Search for solutions to citrus greening disease, which currently threatens the global citrus production and juice industry
Elemental Enzymes Ag and Turf, LLC	Use of soil microbes to improve plant health and crop efficiency thereby increasing crop productivity
Grains Research and Development Corporation (GRDC)	Partnership for the discovery and development of innovative weed management solutions (herbicides)

A 1.3/2 (continued)

Important Collaborations at Crop Science

Partner	Collaboration objective
Ginkgo Bioworks, Inc.	The Joyn Bio joint venture investigates technologies to enhance plant-associated microorganisms
KWS SAAT SE	Joint collaboration and commercial agreement for herbicide-tolerant sugar beet
Microsoft Corp.	Strategic partnership to develop a new cloud-based set of tools and data science solutions for use in agriculture and adjacent industries.
Oxitec Ltd.	Development of a Friendly™ genetically modified fall armyworm exploring a new approach to support integrated pest management in a sustainable way with initial focus on Brazil
Pairwise Plants LLC	Research alliance to develop genome editing tools and products in corn, soybeans, cotton, oilseed rape/canola, and wheat
RAGT SEMENCES S.A.S.	Bayer has entered an exclusive collaboration with RAGT to jointly develop state-of-the-art hybrid wheat varieties to meet the evolving needs of farmers in Europe.
Rantizo, Inc.	Precision aerial pesticide applications while reducing soil compaction. Focusing the application of the right amount to the right plant allows an overall reduction in pesticide applications and of carbon emission compared to traditional sprayers.
Sentera, Inc.	Enables farmers to visualize and order imagery through FieldView™
Sound Agriculture Co.	Sound's technology platform uses biochemical approaches to tap into the natural capabilities of the plant to increase the speed and efficiency of agriculture
Targenomix GmbH	Development and application of systems biology approaches to achieve a better understanding of metabolic processes in plants and develop new herbicides and safeners
Temasek Lmt.	Unfold (joint venture between Bayer and Temasek) has set itself the goal of developing innovative vegetable seeds and raising vertical farming to the next level in terms of quality, efficiency and sustainability

Pharmaceuticals

Research and development activities in our Pharmaceuticals Division are focused on indications with high medical need in the areas of cardiovascular disease, oncology and women's healthcare. We are also engaged in indications outside these fields, such as in the areas of ophthalmology and rare genetic diseases. Our work in radiology focuses on the development of digital solutions, contrast agents and injection systems. Approximately 7,400 (2020: 7,400) 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.

Our research and development activities are focused on the patient. We combine profound knowledge about disease biology with numerous therapy forms and focus on the resolute implementation of digital technologies and the deployment of data sciences to increase the speed, reliability and effectiveness of our R&D processes. We are also strengthening our existing competencies, for example in the area of small-molecule substances, and expanding our expertise in new modalities. Our aim is to employ precision and personalization to offer patients effective solutions that prevent, diagnose, treat or even cure diseases.

Significant advances in 2021 comprised the supplementation of our development portfolio through targeted investment in external growth, including our acquisition of Vividion Therapeutics, Inc., United States, in the area of oncology and immunology. Vividion's leading-edge chemoproteomics technology enables us to develop novel active substances that address previously undruggable proteins. Existing therapies address only a small portion of all disease-associated proteins. Furthermore, the acquisition of Noria Therapeutics, Inc., United States, and its subsidiary PSMA Therapeutics, Inc., added to our oncology pipeline a differentiated, targeted alpha radionuclide therapy based on actinium-225 to treat patients with prostate cancer.

Promising new molecular entities from our early 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.

Bayer also publishes 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

Cell and gene therapy

Cell and gene therapies are one of the next steps in the evolution of drug development. They address the root cause of disease and are geared toward preventing, treating and potentially even curing illnesses. That applies not only to rare genetic diseases but also to more common diseases such as certain immune disorders, cancer and degenerative diseases.

We aim to further broaden our long-term innovation strategy and development portfolio by investing in this area. Our strategy goes well beyond single investments or individual assets – instead, we invest comprehensively in entire fields of technology, so-called technology platforms. This enables a better understanding, more flexible optimization and promising development of new therapies, and will also speed up the development of individual products, giving Bayer a competitive edge. We are therefore focused on establishing four technology platforms: induced pluripotent stem cell (iPSC) therapy, adeno-associated virus (AAV) gene therapy, oncological cell therapies and gene editing.

Our development portfolio already comprises eight projects in various stages of clinical development that cover several therapeutic areas with a high unmet medical need – with leading programs in Parkinson's disease, Pompe disease, hemophilia A and congestive heart failure.

A 1.3/3

Cell and Gene Therapy Projects in Clinical Development

Project	Indication (modality, clinical phase)
AAV2_GDNF_PD	Parkinson's disease (gene therapy, Phase I)
ACTUS-101	Pompe disease (gene therapy, Phase I/II)
NAN-101	Congestive heart failure (gene therapy, Phase I)
AAV2_GDNF_MSA[1]	Multiple system atrophy (gene therapy, Phase I)
DA-01	Parkinson's disease (cell therapy, Phase I)
ATA-2271[2]	Mesothelioma (cell therapy, Phase I)
Peboctocogene camaparvovec (BAY2599023, Factor VIII gene therapy)[3]	Hemophilia A (gene therapy, Phase I/II)
LION-101	Limb-girdle muscular dystrophy type 2I/R9 (gene therapy, start of Phase I scheduled for the first half of 2022)

As of December 7, 2021
[1] Registration number NCT04680065, recruiting has not yet started
[2] In collaboration with Atara Biotherapeutics, Inc., United States
[3] In collaboration with Ultragenyx Pharmaceutical, Inc., United States

We also achieved the following milestones in 2021:

// In June, a Phase I study was initiated by BlueRock for the treatment of Parkinson's disease patients using pluripotent stem cell-derived dopaminergic neurons. In July, the U.S. Food and Drug Administration (FDA) granted Fast Track designation for this therapy. That status enables an accelerated development and subsequent marketing authorization process for therapies of significant medical interest.
// In June, the FDA also granted Fast Track designation for AskBio's AAV-based gene therapy to treat limb-girdle muscular dystrophy type 2I/R9. The Phase I clinical trial is scheduled to begin in the first half of 2022.
// Also in June, we strengthened the contract development and manufacturing organization of our subsidiary Viralgen Vector Core SL with the inauguration of a new AAV-based gene therapy production facility in San Sebastián, Spain.
// In October, we began construction of a modular production unit for cell therapies in Berkeley, United States, to create flexible and high-quality manufacturing capacities for future therapies.
// In December, we entered into a strategic partnership with Mammoth Biosciences, Inc., United States, to develop next-generation CRISPR products. Under the terms of the agreement, the collaboration will concentrate initially on the development of in vivo gene editing therapies with target structures in the liver. The two companies will also work together on ex vivo gene editing projects on a nonexclusive basis.

Phase II and III clinical testing projects

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

A 1.3/4

Research and Development Projects (Phase II)

Project	Indication
Adrenomedullin Pegol (PEG-ADM inhale)	Acute respiratory syndrom
Asundexian (FXIa inhibitor)	Prevention of stroke in atrial fibrillation patients
Asundexian (FXIa inhibitor)	Secondary prevention of stroke
Asundexian (FXIa inhibitor)	Prevention of major adverse cardiac events (MACE)
BAY 1747846 (high relaxivity contrast agent)	Magnetic resonance imaging
BAY 2395840 (BDKRB1 antagonist)	Neuropathic pain
BAY 2586116 (task channel blocker)	Obstructive sleep apnea
Fesomersen (BAY 2976217, FXI LICA, IONIS-FXI-L_{RX})[1]	Prevention of thrombosis in end-stage renal disease (ESRD)
Osocimab (anti-FXIa antibody)	Prevention of thrombosis in end-stage renal disease (ESRD)
Pecavaptan (dual vasopressin receptor antagonist)	Congestive heart failure
Regorafenib + nivolumab combination[2]	Recurrent or metastatic solid tumors
Regorafenib + pembrolizumab combination	Second-line therapy of unresectable hepatocellular carcinoma
Runcaciguat (sGC activator)	Chronic kidney disease
Runcaciguat (sGC aktivator)	Non-proliferative diabetic retinopathy

As of February 10, 2022

[1] In collaboration with Ionis Pharmaceuticals, Inc., United States

[2] In collaboration with Bristol-Myers Squibb Company Co., United States, und Ono Pharmaceutical Co., Ltd., Japan

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

A 1.3/5

Research and Development Projects (Phase III)

Project	Indication
High-dose aflibercept (VEGF inhibitor)[1]	Diabetic macular edema (DME)
High-dose aflibercept (VEGF inhibitor)[1]	Neovascular age-related macular degeneration (nAMD)
Copanlisib (PI3K inhibitor) + chemotherapy combination	Second-line therapy of indolent non-Hodgkin lymphoma (iNHL)
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
Elinzanetant (Neurokinin-1,3 receptor antagonist)	Vasomotor symptoms
Finerenone (MR antagonist)	Heart failure with mid-range or preserved ejection fraction
Finerenone (MR antagonist)	Non-diabetic chronic kidney disease
Regorafenib (multikinase inhibitor)	Newly diagnosed or recurrent glioblastoma
Vericiguat (sGC activator)	Stable heart failure with reduced ejection fraction (HFrEF)

As of January 3, 2022

[1] 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 pharmaceutical projects.

The following material developments occurred in 2021:

Finerenone

// In August, we published results from the Phase III FIGARO-DKD trial evaluating the efficacy and safety of the investigational drug finerenone versus placebo when added to standard of care in patients with chronic kidney disease and type 2 diabetes. The results of the trial, which met its primary endpoint, show that finerenone significantly reduced the combined risk of time to first occurrence of cardiovascular death or nonfatal cardiovascular events (nonfatal myocardial infarction, nonfatal stroke or heart failure hospitalization).
// In September, we announced the initiation of the FIND-CKD Phase III study, which primarily aims to demonstrate the superiority of finerenone compared to placebo in delaying the progression of kidney disease in patients with nondiabetic chronic kidney disease who are additionally receiving guideline-directed therapy.

Darolutamide

// In February, we began enrolling patients in the Phase III ARANOTE trial evaluating the efficacy and safety of darolutamide plus androgen deprivation therapy (ADT) in comparison to placebo plus ADT in patients with metastatic hormone-sensitive prostate cancer.
// In December, we reported that our Phase III ARASENS trial had met its primary endpoint. In the ARASENS trial, darolutamide in combination with docetaxel and androgen deprivation therapy significantly increased overall survival in patients with metastatic hormone-sensitive prostate cancer compared to docetaxel and ADT.

Rogaratinib

// In February 2022, Bayer decided to not pursue further development activities for rogaratinib, a pan-FGFR inhibitor, for the treatment of different types of cancer.

Regorafenib and nivolumab combination

// Upon review of the Phase II data, Bayer and its collaboration partner BMS/Ono Pharmaceuticals have decided to not pursue the development activities for the combination of regorafenib and nivolumab in metastatic colorectal cancer.

Elinzanetant

// In August, we initiated the Phase III clinical development program OASIS, which aims to evaluate the efficacy and safety of elinzanetant in the treatment of vasomotor symptoms during menopause. Elinzanetant is a first-in-class, nonhormonal, once-daily, oral, dual neurokinin-1,3 receptor antagonist that is currently under development. The design and dosing of the Phase III clinical development program is based on the positive data from two Phase II studies (RELENT-1 and SWITCH-1) demonstrating good efficacy for elinzanetant with a favorable safety profile.

Combi IUS LNG/IND

// In April, we decided to discontinue the further development of the Combi IUS LNG/IND program. Combi IUS was a new intrauterine system (IUS) that combined levonorgestrel (LNG) and indomethacin (IND) for five-year contraception and had completed Phase II development.

Fulacimstat CKD

// In March, we decided to halt the development of the chymase inhibitor fulacimstat in the indication chronic kidney disease as the criteria in the Phase II proof-of-concept trial had not been met.

Eliapixant

// In February 2022, we decided to discontinue the development program for eliapixant in all indications following a re-evaluation of the compound's risk/benefit profile.

Filings and approvals

The most important drug candidates currently in the approval process or approved in 2021 are:

A 1.3/6

Main Products Submitted for Approval

Project	Region	Indication
Aflibercept (VEGF inhibitor)[1]	EU, Japan	Retinopathy of prematurity
Finerenone (MR antagonist)	EU, Japan, China	Chronic kidney disease in patients with type 2 diabetes
Larotrectinib (LOXO-101, TRK fusion inhibitor)	China	Solid tumors with NTRK gene fusions
Rivaroxaban (FXa Inhibitor)	China	VTE treatment in children
	Japan, China	Peripheral artery disease (PAD)
Vericiguat (sGC stimulator)[2]	China	Heart failure with reduced ejection fraction (HFrEF)

As of January 3, 2022
[1] In collaboration with Regeneron Pharmaceuticals, Inc., United States
[2] Co-development with Merck & Co., Inc., United States

Finerenone

// In July, the U.S. Food and Drug Administration approved finerenone under the brand name Kerendia™ to reduce the risk of sustained estimated glomerular filtration rate decline, end-stage kidney disease, cardiovascular death, nonfatal myocardial infarction and heart failure hospitalization in adult patients with chronic kidney disease and type 2 diabetes.
// In December, the Committee for Medicinal Products for Human Use (CHMP) of the European Medicines Agency recommended that finerenone be granted regulatory approval as a new therapeutic option for the treatment of adult patients with chronic kidney disease and type 2 diabetes.

Rivaroxaban (FXa inhibitor)

// In January, 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.

Vericiguat

// In June, the Japanese Ministry of Health, Labour, and Welfare approved the soluble guanylate cyclase (sGC) stimulator vericiguat under the brand name Verquvo™ for the treatment of patients with chronic heart failure who are receiving standard treatment for chronic heart failure.
// In July, the European Commission granted marketing authorization for vericiguat under the brand name Verquvo™ in the European Union for the treatment of symptomatic chronic heart failure in adult patients with reduced ejection fraction who are stabilized after a recent decompensation event requiring intravenous therapy.

Xofigo

// RADIANT is a large Phase IV, randomized study of radium-223 dichloride vs. novel anti-hormonal therapy (NAH) in patients with bone-dominant metastatic castration-resistant prostate cancer (mCRPC) progressing on/after one line of NAH. Sequencing of NAH like abiraterone or enzalutamide is still frequently used in clinical practice underscoring the paucity of life-prolonging treatment options in these patients. Therefore, the proposed trial will address a clinically very relevant question in a patient population with high unmet medical need. The RADIANT trial has been designed to meet the European Commission's request for a Phase IV randomized study to further characterize the efficacy and safety of radium-223 dichloride.

Larotrectinib

// In March, the Japanese Ministry of Health, Labor and Welfare granted marketing authorization for the precision oncology drug Vitrakvi™ (active ingredient: larotrectinib) for the treatment of neurotrophic tyrosine receptor kinase (NTRK) fusion-positive advanced or recurrent solid tumors. Larotrectinib is a highly selective TRK inhibitor exclusively designed to treat tumors that have developed an NTRK gene fusion.

Copanlisib

// In December, Bayer withdrew its application for marketing authorization of the combination of copanlisib and rituximab on the basis of the Phase III CHRONOS-3 trial in order to collate additional data and conduct further analyses. Bayer intends to reassess the possibility of resubmitting the compound for marketing authorization on completion of these additional analyses. The approved indication of copanlisib (Aliqopa™) as a monotherapy for the third-line treatment of follicular lymphoma (FL) in the United States, Taiwan and Israel is not affected by these measures.

Molidustat

// In January 2021, the Japanese health authorities granted us regulatory approval for molidustat, a new therapeutic option for renal anemia.

Patents

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

A 1.3/7

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]	2023[c]	2023	2026
Eylea™											
Active ingredient	2025	2025	2025	2025	2025	2025	–	2021–2025[e,d]	2020[c]	–	–
Jivi™											
Active ingredient	2025[a,g]	2030[e,g]	2031[e,h]	2030[e,g]	2031[e,h]	2025[a]	2025	2027[e]	2025[c]	2027	2025[a]
Kerendia™											
Active ingredient	2028[f]	2028[f]	2028[f]	2028[f]	2028[f]	2028[f]	2028[f]	2028[f]	2028	2028[f]	2028[a]
Nexavar™											
Active ingredient	2021	2021	2021	2021	2021	2021	–	2021-2025[d]	2020[c]	–	–
Nubeqa™											
Active ingredient	2030[a]	2030[a]	2035[e]	2030[a]	2035[e]	2030[a]	2030	2035[e]	2030	2032	2030[a]
Stivarga™											
Active ingredient	2028	2028	2028	2028	2028	2028	2024	2026[d]	2024[c]	2024	2031
Verquvo™											
Active ingredient	2031[a]	2031[a]	2036[e]	2031[f]	2031[a]	2031[a]	2031[f]	2031[a]	2031[b]	2031[f]	2031[a]
Vitrakvi™											
Active ingredient	2029[a]	2034[e]	2034	2034[e]	2034	2029[a]	2029	2029[a]	2029[c]	2031[e]	2029[a]
Xarelto™											
Active ingredient	2024[h]	2023[g]	2024[h]	2024[h]	2024[h]	2024[h]	–	2022–2025[d]	2020[c]	–	2025[i]
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
[g] Pediatric SPC extension applied for
[h] Pediatric SPC extension granted
[i] Including 6-month period of pediatric exclusivity granted by the regulatory authority following patent expiration in 2024

In addition to the information in the table, it should be noted that in Europe our Xarelto 10, 15 and 20 mg tablets are protected by a patent granted by the European Patent Office for once-daily dosing until 2026. This patent has been successfully defended at European level but could be attacked again at national level. We are confident that we will be able to ward off such attacks, should they occur. In the case of such secondary patents, there is also the risk of an attempt to circumvent them. However, we will take vigorous action against any infringement of this patent.

In the United States, our Xarelto 10, 15 and 20 mg tablets are also protected by a patent for once-daily dosing beyond 2025. There have already been patent law disputes that have been settled through settlements, including with Unichem, Inc. and Unichem Pharmaceuticals (USA), Inc. (collectively “Unichem”). According to the settlement with Unichem, Unichem will be licensed under the relevant patents to market a generic version of Xarelto 10, 15 and 20 mg tablets from 2027 or earlier in certain circumstances, which we do not expect at this time. In the United States, as in Europe, there is a risk of attempts to circumvent and attacks on this patent by previously uninvolved competitors from 2025 onwards.

External innovation

We achieved significant progress in the area of external innovation – a strategic cornerstone of our R&D strategy – in 2021. This also includes acquisitions of companies that are engaged in research in our core therapeutic areas.

// In June, we concluded an agreement to acquire Noria Therapeutics, Inc., United States, and its subsidiary PSMA Therapeutics, Inc., to strengthen our oncology portfolio. This acquisition gives us exclusive rights to a differentiated alpha radionuclide therapy based on actinium-225 and a small molecule targeting the prostate-specific membrane antigen (PSMA), and broadens our existing oncology portfolio of targeted alpha therapies.

// In August, we announced an agreement to acquire the U.S.-based biopharmaceutical company Vividion Therapeutics, Inc., and thus gain access to a cutting-edge chemoproteomics platform that identifies previously unknown binding pockets in undruggable targets. The acquisition will strengthen our drug discovery capabilities and enable us to develop novel compounds in indications of high unmet medical need. Vividion's technology has already proven its applicability preclinically in oncology and immune-related diseases, with potential to expand into additional therapeutic areas.

The following developments also took place in our collaboration projects:

// In September, Huma Therapeutics Ltd., United Kingdom, announced a collaboration with us. The joint research project is aimed at simplifying the analysis of computed tomography (CT) images with the help of machine learning. The jointly developed technology is geared toward enabling a distinction to be made on CT images between various types of non-small-cell bronchial carcinoma, thus improving the accuracy and speed of diagnosis.

// In October, our U.S. partner Informed Data Systems Inc. (One Drop) announced the introduction of a One Drop module for cardiovascular disease prevention. The first product jointly developed with us utilizes artificial intelligence to offer a personalized health program and combine clinical guidelines with ultra-modern technology and prognostic analysis. The ultimate objective is to reduce the risk of developing cardiovascular disease.

// In connection with our relief efforts to address the pandemic, we announced plans at the beginning of 2021 to support the biopharmaceutical company CureVac N.V. in developing its first-generation vaccine candidates. In October, CureVac announced it was withdrawing its first-generation COVID-19 vaccine candidate from the ongoing registration procedure of the European Medicines Agency (EMA) in order to focus on the development of a second-generation COVID-19 vaccine candidate. This obviates the need for further development, manufacturing and logistical support, and we have therefore discontinued the related activities in coordination with CureVac.

The following table provides an overview of additional significant ongoing partnerships and collaborations newly formed in 2021:

A 1.3/8

Main Collaborations

Partner	Collaboration objective
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) antagonists program
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
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 clincial 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
Huma Therapeutics Ltd.	Collaboration to develop machine learning technologies that will simplify the diagnosis of certain types of lung cancer
Informed Data Systems Inc. (One Drop)	Collaboration for co-development of digital healthcare products in a variety of therapeutic areas
Invitae Corporation	Collaboration for global development and marketing of companion diagnostics (CDx) tests for Vitrakvi™ (larotrectinib) on the basis of next-generation sequencing
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
Mammoth Biosciences, Inc.	Strategic partnership in the field of gene editing, focusing on the development of in vivo therapies with target structures in the liver, and non-exclusive collaboration in the field of ex vivo gene editing
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
Regeneron Pharmaceuticals	Cooperation and license agreement for the brand Eylea™
Recursion Pharmaceuticals Inc.	Strategic partnership to conduct research into new treatments for fibrotic diseases of the lungs, kidneys, heart and other organs
Schrödinger, Inc.	Development of an artificial-intelligence-based platform for chemical compound design
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 major sites in the United States, France, Spain, Germany and China at which approximately 600 employees (2020: 600 employees) work. We are active in the areas of pain, cardiovascular risk prevention, dermatology, nutritional supplements, digestive health, allergy and cough & cold.

Our 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 60 new consumer-validated product innovations in 2021. We are strengthening Consumer Health's innovation pipeline with around 150 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.[9]

A further important part of our innovation strategy is transitioning current prescription medicines that are suitable for self-care to over-the-counter 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 developed a new strategy called 'Innovation with Partners' to discover new sources of growth.

We also introduced a number of product line extensions for existing brands in various countries in 2021, for example:

Bepanthen™ Derma, a daily skin range for dry skin comprising body and face products, including wash gels, was launched in nine countries globally, including Brazil, France and Germany.

In the United States, we expanded our product portfolio with a line extension of our Aleve™ brand. The newly-launched AleveX™ is a range of topical products for the treatment of pain.

In the Europe/Middle East/Africa region, we extended the LAIF™ product line in Germany with the launch of CalmaLAIF™. The formula is a unique combination of four natural ingredients to help reduce stress complaints, promoting both a sense of calm and restorative sleep.

In the Asia/Pacific region, we expanded our range of Redoxon™ supplements in our Nutritionals category with the launch of single vitamin C in chewable and film-coated tablet formats for adults and kids.

We also received approval from the Food and Drug Administration (FDA) in the United States to switch the in-licensed product Astepro™ Allergy from Rx to OTC status. Astepro™ Allergy relieves nasal congestion, runny nose, sneezing and itchy nose due to hay fever or other upper respiratory allergies. This switch means that Astepro™ Allergy is the first and only steroid-free, antihistamine nasal spray for allergies to be available as an OTC in the United States for adults and children 6 years of age and older, with the product set to be launched over the course of 2022.

[9] 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.

1.4 Commitment to Employees

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 systematic 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.

For more than 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. Attributes define each value's practical meaning and behaviors, serving as the sole reference for how employees work at Bayer.

An overview of the 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 2021, the working conditions for around 54% (2020: 55%) of our employees worldwide were governed by collective or company agreements.

Employee data

On December 31, 2021, we employed 99,637 people (2020: 99,538) worldwide. In Germany, we had 23,116 (2020: 23,398) employees, representing 23.2% of the total Group workforce (2020: 23.5%).

In 2021, the Bayer Group hired 11,819 new employees (accounting for 11.7% of our workforce). On the reporting date, our employees had worked for the Bayer Group for an average of 11.2 years (2020: 11.3). Our workforce includes only a small number of employees on temporary contracts (3.7%).

Restructuring measures

We act with social responsibility when changes and restructuring measures are necessary. In all countries, we aim to minimize the impact on employees and find mutually agreeable solutions in cases where job reductions are necessary. This is also the case in Germany, where agreements are in place with employee representatives that fundamentally rule out dismissals for operational reasons in the intercompany personnel network of Bayer AG in the country until the end of 2025.

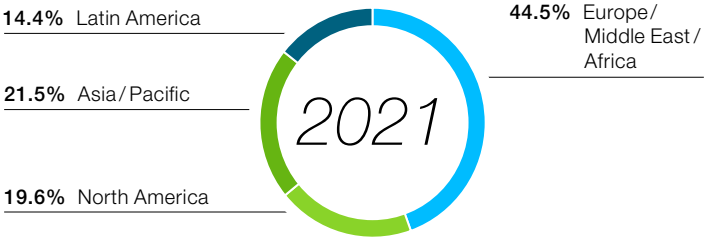
We made further progress with the planned Group-wide measures first announced in 2018 and are at different stages of development with regard to the acceleration of our transformation announced in 2020. We anticipate that all of the major transformation measures will be implemented by the end of 2024. Flexible models with attractive conditions have been offered to employees of various age groups since February 2019.

A 1.4/1

Employee Data

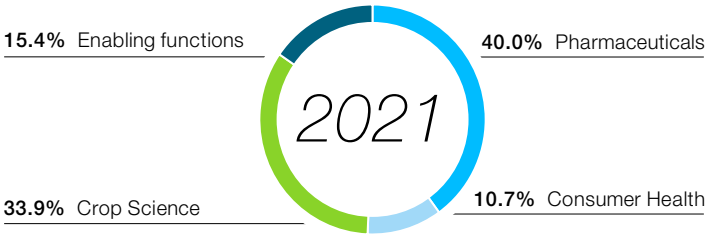
	2020	2021	Change %
Total	**99,538**	**99,637**	**+0.1%**

by Region



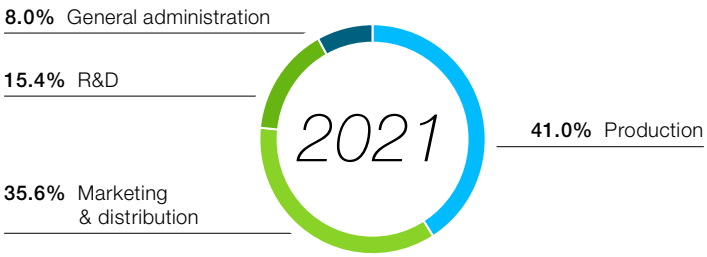
	2020	2021	Change %
Europe/Middle East/Africa	45,146	44,309	–1.9%
North America	19,111	19,515	+2.1%
Asia/Pacific	21,310	21,448	+0.6%
Latin America	13,971	14,365	+2.8%

by Division



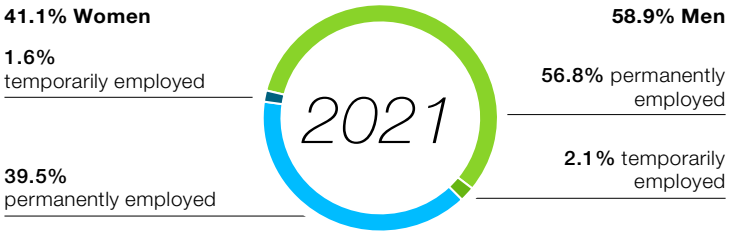
	2020	2021	Change %
Crop Science	33,064	33,738	+ 2.0%
Pharmaceuticals	39,206	39,931	+ 1.8%
Consumer Health	10,570	10,647	+ 0.7%
Enabling functions	16,698	15,321	– 8.2%

by Function



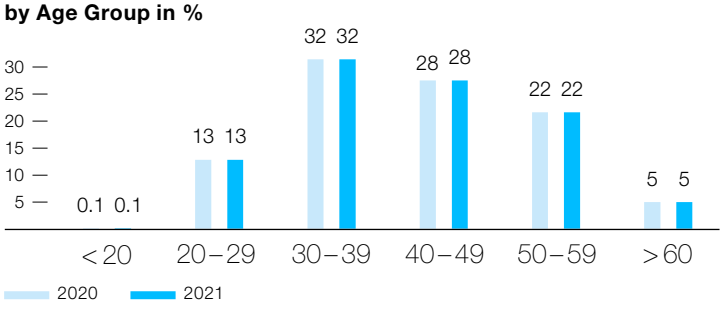
	2020	2021	Change %
Production	40,696	40,838	+0.3%
Marketing & distribution	35,424	35,496	+0.2%
R&D	15,065	15,310	+1.6%
General administration	8,353	7,993	–4.3%

by Gender



	Women		Men	
	2020	2021	2020	2021
Europe/Middle East/Africa	19,971	19,530	25,174	24,779
North America	7,232	7,482	11,879	12,033
Asia/Pacific	8,174	8,447	13,136	13,001
Latin America	5,325	5,465	8,647	8,900
Total	40,702	40,924	58,836	58,713

by Age Group in %



Fluctuation in %

	Voluntary		Total	
%	2020	2021	2020	2021
Women	5.1	6.7	12.3	12.6
Men	4.7	5.9	12.2	11.8
Total	4.9	6.2	12.3	12.1

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 76% (2020: 71%) of Bayer employees worldwide to complement national pension systems.

Starting in 2021, we adjusted 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 cash flow targets. These additional parameters 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.

A 1.4/2

Personnel Expenses and Pension Obligations

€ million	2020	2021
Personnel expenses	9,769	11,798
of which pension expenses	976	904
Pension obligations[1]	26,595	25,734
Pension benefits paid[2]	1,139	1,502

[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 increase in personnel expenses is largely due to additions to provisions for variable compensation. In 2021, provisions of around €1,570 million (2020: around €500 million) were established for variable one-time payments to employees under the Group-wide short-term incentive (STI) program and similar programs. In addition, a budget of approximately €100 million (2020: €72 million) was made available in 2021 for individual Top Performance Awards. Furthermore, there were also additional allocations to provisions in connection with the drive to accelerate the company's transformation.

Our compensation principles comprise providing fair compensation to all and informing all 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 non-profit organization Business for Social Responsibility, 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, Bayer hires apprentices in Germany in more than 34 different occupations. In total, we have around 1,300 apprentices. Bayer also offers trainee programs in various areas for those embarking on a career and internships for students around the world.

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 26 hours of ongoing training in 2021.

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.

In 2021, part-time employees accounted for around 6.2% of our workforce (of which 53.6% were women and 46.4% men), primarily in Europe.

Partly in response to the COVID-19 pandemic, we are developing an approach for when, where and how employees will work in the next normal. Ensuring employee safety and driving work-life integration remain important enablers of our people.

Health promotion

Almost 97% (2020: 97%) 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 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 aim to 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 attach great importance to equal pay for men and women. We developed a consistent methodology for gender pay parity equity analysis in 2020 and have started applying the methodology. We employ people from around 154 nations.

Our Inclusion & Diversity strategy focuses on the integrative behavior and decision-making of all employees within the Group. To support this, we have established inclusion and diversity committees at various management levels. 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 41.1% (2020: 40.9%). We are specifically targeting a greater gender balance in management. Based on 41,520 employees in management, the proportion of women in 2021 was 41.9% (2020: 41.0%), and among skilled workers 40.5% (2020: 40.8%). The proportion of women in top management, which encompasses the highest management level below the Board of Management, increased again compared to previous years. At the end of 2021, it was made up of 26.5% women (2010: 6.5%[10]) and 73.5% men (2010: 93.5%).

[10] Figure as last reported

Our top management currently comprises 37 nationalities (2020: 35), with around 65% (2020: 64.8%) 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 (2020: 42). There were no significant changes to the age structure in 2021 compared to 2020.

People with disabilities are an integral part of our workforce. Based on voluntary statements by employees, we employ some 2,150 people with disabilities, 45% of whom are women and 55% men. That represents around 2.1% of our total workforce.

In 2021, we released our goals for gender balance across the Bayer Group. We aim to increase female representation to 33% across our entire top management by 2025, and to 50% across all other management levels 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 aspects such as ethnic origin are integrated into targets in our country organizations.

1.5 Procurement and Supplier Management

We have an impact on 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 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 2021, we had a total of 93,844 (2020: 97,362) suppliers. Our procurement spend was €18.9 billion (2020: € 17.7 billion).

Our main direct procurement materials include active ingredients, raw materials, intermediates, finished products and seeds. Technical goods and services, research and development (R&D) resources, and marketing and IT services 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 our company's competitiveness and ensure smooth production processes.

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

To meet our climate protection targets, Procurement takes and supports measures to reduce greenhouse gas (GHG) emissions in our supply chain (Scope 3). We advanced our activities from 2020 and initiated new ones in 2021. We continue to lead a dedicated workstream "GHG Scope 3 Emissions" in the TfS initiative and have also been working with the World Business Council for Sustainable Development and CDP Supply Chain.

Regarding sustainable palm oil, Procurement decided in 2021 to switch from the Roundtable on Sustainable Palm Oil (RSPO) Book & Claim model (credits) to the RSPO Mass Balance model. The transition to the new process will take place in early 2022, from which point we will source RSPO Mass Balanced-certified material.

In 2021, we focused our efforts on raising awareness for human rights in the supply chain among our procurement employees and suppliers as well as on incorporating the German Supply Chain Due Diligence Act into our business operations.

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. We select suppliers to be evaluated on sustainability performance based on a risk classification matrix that considers country as well as category sustainability risks. This allows for a more targeted analysis according to individual risk criteria (e.g., human rights violations), thus increasing transparency in our supply chain.

Our sustainability requirements are established in the Bayer 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 contain a clause that authorizes us to verify suppliers' compliance with our sustainability requirements. For all ongoing contracts, we will integrate the standard clause successively from 2022 onward.

We verify suppliers' observance of the code requirements with the aid of online assessments[11] or on-site audits. We evaluate our strategically important suppliers – together comprising around 20% of our total procurement spend – and suppliers with a high sustainability risk, which factors in both country and category risks. Our process also includes supplier evaluations performed within the scope of the two sustainability industry initiatives we are a part of. In total, our service provider EcoVadis assessed 802 (2020: 670) suppliers on our behalf in 2021. In 2021, we arranged for 67 (2020: 26) of our suppliers to be audited on site by external, independent auditors. In addition, 10 suppliers were audited virtually due to the COVID-19 pandemic. In 2021, 200 (2020: 83) 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 2021, critical results were determined for 22 suppliers (3% of all assessed and audited suppliers; 2020: 13 suppliers (2%)). In these cases, we request that the suppliers remedy the identified weaknesses. We monitor the implementation of these activities through re-assessments or follow-up audits. We reserve the right to terminate a supplier relationship if no improvement is observed during re-evaluations. In 2021, we did not have to end any supplier relationship due solely to sustainability performance, but we took measures to reduce business with suppliers that did not manage to improve their sustainability performance. In 2021, 508 (2020: 357) of the 879 (2020: 701) suppliers assessed and audited improved their sustainability performance.

[11] The online assessments of suppliers that belong to a company group generally take place at parent company level.

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 used properly. 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 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 agent, the product and its active ingredients undergo a thorough safety assessment through suitable scientific studies and testing.

We do not market any crop protection products that are classified by the WHO as being highly toxic (WHO Tox Class I). In addition, we market only those crop protection products whose active ingredients are registered in at least one OECD country.

We aim to strengthen all stakeholders' confidence in our products through transparency. In line with this, we are the first company in the agriculture industry to make safety-relevant data on crop protection products and genetically modified crops publicly accessible. Summaries of scientific studies for 32 of our active ingredients submitted to the European Food Safety Authority (EFSA) in the context of registration procedures 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 and genetically modified crops are available on specific request. In addition, we also publish the internal standards that we use to evaluate the safety of our products and show how we determine that safe use of our products can be guaranteed.

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 2021, 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 (FAO/WHO 2014). The principles of our product stewardship are established in our Product Stewardship Policy and implemented in the Product Stewardship Program.

In the **Pharmaceuticals** Division, we assess the medical benefit-risk profile of our pharmaceutical and medicinal 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.

After proving the efficacy and safety of a nonprescription (OTC) medicinal product and consumers' ability to make self-selection decisions, **Consumer Health** receives marketing authorization from the relevant authorities. We continuously ensure the favorable benefit-risk profile of these products by conducting post-marketing surveillance and generating scientific evidence throughout the entire product life cycle. In addition to these OTC products, Consumer Health also markets medical devices, cosmetics and nutritional supplements. We conduct ongoing monitoring and measurements to ensure safety, efficacy and compliance with regulatory requirements around the world. We also monitor ingredients across all product categories and act on any concerns that are identified to provide the best-quality products for our patients and consumers.

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 to our suppliers, whose compliance with our animal welfare requirements we monitor regularly. We published a corporate policy outlining these principles in 2020. We aim to minimize the use of study animals and to employ alternative methods whenever possible. In early drug research, Bayer continuously makes use of different in silico-based and in-vitro processes that help reduce the number of animal studies; included in this are our activities with "organ-on-a-chip."

Environmental impact

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

Biodiversity

We aim to promote the responsible use of natural resources, complying with international and national legislation and respecting biodiversity. Our principles on biodiversity are set forth in a corporate policy and a separate position paper on this issue. In this, we express our commitment to the objectives of the United Nations Convention on Biological Diversity, which includes the fair and equitable sharing of the benefits arising from the use of genetic resources. We also published a supplementary corporate policy that is designed to ensure compliance with international and national legislation on access to genetic resources and the fair utilization of the resulting benefits. Through monetary and nonmonetary contributions for the establishment of new collections that serve to preserve the genetic diversity of crops, we help to facilitate the conservation and sustainable use of plant genetic resources. In addition, we participate in a variety of projects, promote the build-up of capacities to develop expertise and structures, and support other global efforts to preserve biodiversity. Furthermore, we continually deploy plant breeding innovations that help improve the genetic diversity of crops, food security and ecological sustainability.

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

Modern agriculture in particular benefits significantly from biodiversity, but it also inevitably involves interfering with the balance of nature and can therefore contribute to the loss of biodiversity. To foster nature-positive production, we are therefore investigating and developing cultivation systems that help to achieve a better balance between productivity and the conservation of soil health and habitats. In cooperation projects involving the Bayer ForwardFarms and nature conservation experts, we research what this balance could look like in various countries and regions. We develop and propose to our customers and distribution partners effective biodiversity-inclusive production systems and initiate first steps to support their

implementation, which is realized through specific measures on the part of our customers and distribution partners.

We support the development of integrated pest management (IPM) and pollinator management methods which increase the abundance and diversity of beneficial insects, protect pollinators and reduce the use of pesticides.

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 and other nontarget species 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. In addition, we develop bee-friendly crop protection products and are also involved in the development of application processes that reduce the exposure of bees.

Biotechnology

We apply biotechnological methods in biopharmaceutical production (e.g., Kogenate™, Kovaltry™, Jivi™) and the development of innovative biopharmaceuticals, cell and gene therapies. In addition, we apply biotech-based methods in the area of seeds (e.g., Bollgard II™, XtendFlex™ Cotton and Intacta RR2 Pro™). In plant breeding, 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 for 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, our Crop Science Division maintained its membership in the Excellence Through Stewardship (ETS) organization in 2021.

Trace substances in the environment

We are 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 risks 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 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. Alongside the regulatory standards, this action could also come in the form of our own, more far-reaching internal environmental standards, as they are outlined in our “Health, Safety and Environment Key Requirements” (HSE KR), for instance. We are also working to develop further effective risk minimization measures in various research projects.

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 Health, Safety & Environment (HSE) enabling function, which defines framework conditions in the form of corporate policies and other measures. We use management systems to control operational implementation in the divisions.

Energy consumption

Bayer's total energy consumption fell year on year to 34.8 petajoules in 2021 (2020: 35.9 petajoules). This includes both primary energy consumption, which mainly relates to fossil fuels, and secondary energy consumption. This decline was primarily attributable to disruptions to production at the U.S. sites in Soda Springs and Luling in the wake of Hurricane Ida. A reduction in the size of the company car fleet was also a factor.

Energy efficiency reported as the ratio of energy consumed to external sales improved from 241 kWh/€ thousand in 2020 to 220 kWh/€ thousand in 2021.

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 2021:

A 1.7/1

Greenhouse Gas Emissions

Million metric tons of CO_2 equivalents	2020	2021
Scope 1: Direct emissions[1]	2.01	1.93
Scope 2: Indirect emissions[2] according to the market-based method	1.57	1.24
Total greenhouse gas emissions according to the market-based method	**3.58**	**3.17**
Scope 3: Indirect emissions from our upstream and downstream value chains (by materiality)[3, 4, 7]	9.20	8.94
of which indirect emissions from our upstream value chain to attain the SBT[4, 5, 6, 7]	8.22	8.16

[1] 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 that we sell to other companies 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 2021, 98.2% 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.

[2] Indirect emissions result from the procurement of electricity, steam and cooling energy (Scope 2).

[3] Scope 3 emissions were subjected to a limited assurance review.

[4] 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 generated in operations, (6) business travel, (7) employee commuting and (12) end-of-life treatment of sold products.

[5] Science Based Target

[6] For our reduction target for Scope 3 emissions in line with the SBTi, we consider the following materially important Scope 3 categories, which accounted for 88% of Scope 3 emissions in 2021: (1) purchased goods and services, (2) capital goods, (3) fuel- and energy-related activities, (4) (upstream) transportation and distribution and (6) business travel.

[7] The figures for 2020 had to be corrected as new information came to light in the categories 3.1, 3.2 and 3.4. This encompassed the integration of price and currency effects and the correction of transportation data.

In 2021, we cut Scope 1 and 2 greenhouse gas emissions by 0.41 million metric tons of CO_2 equivalents. This represents a reduction of 11.5%. The main reason for this decline is the increased share of electricity purchased from renewable sources (Scope 2). In addition, we financed reforestation and forest conservation projects in 2021 by purchasing climate protection certificates in, for example, Brazil, Indonesia, Nicaragua and Uganda, thereby offsetting

300,000 metric tons of greenhouse gas emissions. In the Scope 3 Science Based Targets (SBT) categories relevant for our company, we reduced our emissions by 0.05 million metric tons of CO_2 equivalents, corresponding to a decline of 0.6%. The decrease in Scope 3 emissions in the SBT-relevant Scope 3 categories was mainly due to our operational purchasing activities, while the decline in the non-SBT-relevant categories was attributable to a reduction in the volume of waste from our production activities (category 3.5) and product packaging (category 3.12).

Water

We use water resources as sparingly as possible and are endeavoring to further reduce emissions into water. All sites in water-scarce areas or areas identified as being threatened by water scarcity have a water management system in place.

Total water use in 2021 amounted to 55 million cubic meters (2020: 57 million cubic meters). This 4.1% year-on-year decrease in use is due to infrastructure-related measures at the Orizaba Proquina site in Mexico. Around 35.7% 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 came in at 25 million cubic meters in 2021 and was thus level with the previous year. All wastewater is subject to thorough checks before it is discharged into the various disposal channels. In 2021, 79.6% 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 aim to minimize material consumption and disposal volumes through systematic waste management. In accordance with Bayer's corporate policies, all production sites are required 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 slightly to 1,001,000 metric tons in 2021 (2020: 935,000 metric tons). This was mainly due to an increase in seed production at several sites in Latin America, which meant that larger volumes of vegetable by-products were disposed of.

The volume of hazardous waste increased to 316,000 metric tons (2020: 305,000 metric tons) due to building and renovation work at our site in Berlin, Germany. The volume of hazardous waste from production, including hazardous waste from wastewater treatment plants, remained consistent with the 2020 level, at 303,000 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 policies. 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. For this purpose, Bayer uses a globally standardized key performance indicator (KPI) – the Process Safety Incident Rate (PSI-R) – that is integrated into the Group-wide reporting system. The PSI-R indicates the number of PSI incidents per 200,000 hours worked. In 2021, the PSI-R was 0.08 (2020: 0.08).

Transportation safety

Transportation and warehouse safety is part of 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 32 transport incidents in 2021 (2020: 17[12]), primarily involving road transport accidents. We define transport incidents as accidents that cause personal injury or significant damage to property, environmental impact resulting from the release of substances, or leakage of hazardous goods.

Safe working conditions

We firmly believe that nothing is important enough to justify an accident or any risk to the safety of our 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 2021, occupational safety and health protection were once again primarily shaped by the development of the COVID-19 pandemic. With the health and safety of our employees being our top priority, the existing regulations and requirements were adapted to reflect changing risk situations, 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 activity profiles at the individual sites into consideration.

In 2021, the Recordable Incident Rate (RIR)[13] increased from 0.32 to 0.37 cases per 200,000 hours worked, corresponding to 441 occupational injuries worldwide. The low RIR is due to the long-term impact of effective occupational safety measures and programs as well as short- and medium-term effects in connection with the COVID-19 pandemic resulting from a reduction in general movement due to employees working from home and paying greater attention to their health and safety, for example.

Despite all safety precautions undertaken, it is not possible to completely rule out serious or fatal accidents. Two Bayer employees lost their lives in work-related accidents in 2021. We will not let up in our efforts to further reduce risks and risky behavior.

In 2021, the Intelex accident management platform was introduced to streamline and accelerate existing processes. Employees can now quickly, easily and anonymously report a safety incident, near accident or safety observation. Using this platform as a central source for data and insights enables us to share experiences and knowledge better, and thus reduce the incidence of illnesses and injuries in the future. The new KPI “severity of injury” is also recorded in Intelex to assess the relevance of a reportable incident in terms of injury outcome and enable safety improvements to be made.

[12] Prior-year figure adjusted due to retrospective reports of said incidents
[13] 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

2021 was a successful year, both operationally and strategically. We registered a substantial increase in sales, with growth of 8.9% on a currency- and portfolio-adjusted basis (Fx & portfolio adj.). EBITDA before special items declined by 2.5%, after we were able to largely offset an increases in costs, which was partly due to inflation, and significant currency headwinds. The EBITDA margin before special items came in at 25.4%. At Crop Science, sales advanced by a double-digit percentage after adjusting for currency and portfolio effects, while EBITDA before special items rose by 3.6%. The growth in earnings was driven by the division's strong business performance but was mainly held back by an inflation-related increase in the cost of goods sold. Sales at Pharmaceuticals advanced by 7.4% (Fx & portfolio adj.), as business recovered from the impact of COVID-19 restrictions. Earnings declined against the prior year due to investments in marketing and in research and development, as well as an increase in the cost of goods sold. Consumer Health registered substantial sales growth on a currency- and portfolio-adjusted basis and a corresponding increase in EBITDA before special items, which advanced by 6.8%. Earnings per share (total) were up year on year but were diminished by allocations to provisions in connection with the glyphosate litigation and by further special charges for restructuring programs. Core earnings per share rose by 1.9% to €6.51.

In the Group outlook published in February 2021 in the 2020 Annual Report, we anticipated currency-adjusted sales of approximately €42 billion to €43 billion, corresponding to an increase of about 3% on a currency- and portfolio-adjusted basis. We expected an EBITDA margin before special items of around 27% on a currency-adjusted basis, which, based on the sales forecast, would have corresponded to EBITDA before special items of €11.2 billion to €11.5 billion on a currency-adjusted basis. We also forecast core earnings per share of approximately €6.10 to €6.30 on a currency-adjusted basis, and free cash flow of around minus €3.0 billion to minus €4.0 billion.

After a slight adjustment in August, the forecast was revised again in November due to the very good business performance. As part of this updated guidance, we anticipated an increase in currency-adjusted sales to approximately €44 billion, corresponding to currency- and portfolio-adjusted growth of approximately 7%. The EBITDA margin before special items was expected to come in at 26% on a currency-adjusted basis. In the revised outlook, we anticipated core earnings per share of between €6.50 and €6.70 on a currency-adjusted basis. Free cash flow was forecast to come in at between approximately minus €0.5 billion and minus €1.5 billion.

We exceeded this revised Group outlook.

A 2.1.1/1

Target Attainment in 2021

	Forecast for 2021[1] currency-adjusted	Revised forecast for 2021[2] currency-adjusted	Target attainment in 2021 currency-adjusted	2021 results reported
Group sales	Approx. €42 to €43 billion	Approx. €44 billion	€45.2 billion	€44.1 billion
	Approx. +3% (Fx & p adj.)	Approx. +7% (Fx & p adj.)	+8.9% (Fx & p adj.)	+6.5%
EBITDA before special items	€11.2 to €11.5 billion based on a margin of approx. 27%	€11.2 to €11.5 billion based on a margin of approx. 26%	€11.7 billion and a margin of 25.9%	€11.2 billion and a margin of 25.4%
Core earnings per share	Approx. €6.10 to €6.30	Approx. €6.50 to €6.70	€6.86	€6.51
Free cash flow	Approx. minus €3.0 to minus €4.0 billion	Approx. minus €0.5 to minus €1.5 billion	€1.4 billion	€1.4 billion

Fx & p adj. = currency- and portfolio-adjusted
[1] Issued in February 2021
[2] Issued in November 2021

2.1.2 Key Events

Approval granted for Kerendia™ (finerenone) in the United States and Verquvo™ (vericiguat) in the European Union and Japan

In July, the U.S. Food and Drug Administration (FDA) approved finerenone for the treatment of adult patients with chronic kidney disease and type 2 diabetes under the brand name Kerendia™.

Also in July, the European Commission approved vericiguat in the European Union for the treatment of symptomatic chronic heart failure in adult patients under the brand name Verquvo™. We also obtained approval for Verquvo™ in Japan in June.

Portfolio changes

In February, we announced plans to divest the Environmental Science Professional business. It is a global leader offering solutions to control pests, disease and weeds in nonagricultural areas such as vector control, professional pest management, industrial vegetation management, forestry, and turf and ornamentals.

In June, we concluded an agreement to acquire Noria Therapeutics, Inc. and PSMA Therapeutics Inc. to broaden our oncology platform of targeted alpha therapies. Through this acquisition, we will obtain exclusive rights to a differentiated alpha radionuclide therapy based on actinium-225 and a small molecule targeting the prostate-specific membrane antigen.

In August, we announced that we had entered into an agreement to acquire the U.S. biopharmaceutical company Vividion Therapeutics, Inc. Through the acquisition, we will gain access to a cutting-edge chemoproteomics platform that is able to identify previously unknown binding pockets in undruggable targets to generate first-in-class novel compounds in indications of high unmet medical need. Vividion's technology has already proven its applicability pre-clinically in oncology and immune-related diseases, with potential to expand into additional therapeutic areas.

In December, we entered into a strategic collaboration with U.S. company Mammoth Biosciences, Inc., to develop next-generation CRISPR products. Under the terms of the agreement, we will initially focus on developing in vivo gene-editing therapies with target structures in the liver. Together with Mammoth, we will also jointly explore work on ex vivo projects on a nonexclusive basis. The partnership with Mammoth significantly strengthens our cell and gene therapy platform, and will enhance the potential of our cell and gene therapy strategy by combining Mammoth's novel CRISPR systems with our existing gene augmentation and induced pluripotent stem cell (iPSC) platforms.

Plan to resolve glyphosate litigations

At the end of May, we announced a series of measures to resolve potential future glyphosate litigation, combining both legal and commercial actions. The responsible court had previously denied the motion to approve the class settlement agreement.

In July, we provided an update on the progress made and announced additional details. We have developed two scenarios based on a potential ruling by the Supreme Court of the United States in the Hardeman case.

// If the Supreme Court accepts the petition for review and rules in our favor in this matter, it could effectively end potential future litigation.
// The second scenario assumes that the Supreme Court either refuses to hear the Hardeman case or issues a ruling in favor of the plaintiff, in which case we would activate our own claims administration program. We have implemented corresponding accounting measures for this scenario, resulting in a discounted allocation to provisions for litigations of €3.5 billion in the second quarter of 2021 on top of the existing provisions.

We are confident that this provides an effective path to manage and address any risks from potential future Roundup™ litigation, while simultaneously giving Bayer more control going forward. Both we and the relevant regulatory authorities continue to believe there are no safety concerns in connection with these products. See the "Legal Risks" in Note [30] for further details.

In December, the U.S. Supreme Court requested the views of the Solicitor General in the Hardeman case. We are encouraged by that step and believe there are strong legal arguments to support Supreme Court review and reversal, as our petition and the many amicus briefs filed in support of the petition underscore. The U.S. expert agency, the Environmental Protection Agency, has consistently found that glyphosate-based herbicides can be used safely and are not carcinogenic, and has stated that a cancer warning would be false and misleading and misbrand the product. As previously announced, we had engaged in settlement negotiations only very selectively since the Supreme Court application and have suspended them altogether since the Supreme Court's decision to seek the opinion of the U.S. government and in light of two recent cases won in California.

Further details on the litigation above and other legal risks are given in the “Legal Risks” in Note [30].

Financing activities

In January, we placed bonds comprising four tranches with a total volume of €4 billion. The four tranches have maturities of 4, 8, 10.5 and 15 years. The proceeds were used for general corporate purposes, including the refinancing of existing liabilities.

Supervisory Board and the Board of Management

Sarena Lin was appointed to the Board of Management by the Supervisory Board. Effective February 1, 2021, 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.

In addition, the Supervisory Board of Bayer AG appointed Rodrigo Santos to the company’s Board of Management and the position of President of the Crop Science division, effective January 1, 2022. Santos succeeded Liam Condon, who informed the Supervisory Board that he wished to bring forward the end date of his contract with the company from December 31, 2023, to December 31, 2021.

2.1.3 Economic Environment

Global economy grows significantly

See also A 2.2.2

After contracting in 2020 due to the pandemic, the world economy registered substantial growth in 2021. This was largely attributable to the increasing number of vaccinations against COVID-19 and the easing of protective measures and contact restrictions. As a result, labor market conditions improved and private consumption picked up again. However, the pace of economic growth slowed over the course of the year, mainly due to additional waves of COVID-19 and the rapid spread of the Omicron variant in particular, which led to restrictions being reintroduced. Furthermore, problems in international supply chains led to shipment delays and rising prices in many areas.

A 2.1.3/1

Economic Environment

	Growth[1] 2020	Growth[1] 2021
World	–3.4%	+5.6%
European Union	–6.0%	+5.2%
of which Germany	–4.9%	+2.7%
United States	–3.4%	+5.7%
Emerging Markets[2]	–1.6%	+6.6%

2020 figures restated

[1] Real GDP growth, source: IHS Markit (as of January 2022)

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

Currency development

In 2021, Group sales were impacted by negative currency effects of €1,102 million, while EBITDA before special items was diminished by negative currency effects of €507 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		
	2020	2021	Fx effect on sales	Fx effect on clean EBITDA	Of which result of Fx hedging[1]
AUD	1.65	1.57	43	16	(10)
BRL	5.80	6.37	(200)	(181)	(103)
CAD	1.53	1.48	37	10	(9)
CNY	7.87	7.63	95	22	(29)
JPY	121.71	129.82	(132)	(47)	26
MXN	24.35	23.99	13	(5)	(10)
RUB	81.86	87.11	(73)	(56)	(8)
TRY	7.90	10.23	(111)	(72)	0
USD	1.14	1.18	(652)	(141)	18
Other currency areas			(122)	(53)	(11)
All currencies			**(1,102)**	**(507)**	**(136)**

[1] Result of Fx hedging, including hedging costs, for all currencies in 2021 (minus €55 million) and 2020 (€84 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

			Change (%)				Change (%)	
€ million	Q4 2020	Q4 2021	Reported	Fx. & p adj.	2020	2021	Reported	Fx. & p adj.
Sales	**9,995**	**11,118**	**+11.2**	**+8.0**	**41,400**	**44,081**	**+6.5**	**+8.9**
Change in sales[1]								
Volume	+5.4%	+3.7%			+3.0%	+6.8%		
Price	−2.8%	+4.3%			−2.4%	+2.1%		
Currency	−9.4%	+2.9%			−4.4%	−2.6%		
Portfolio	−0.2%	+0.3%			−1.1%	+0.2%		
Sales by region								
Europe/Middle East/Africa	2,996	3,255	+8.6	+7.4	12,881	13,648	+6.0	+7.4
North America	3,027	3,401	+12.4	+6.4	14,352	14,952	+4.2	+7.5
Asia/Pacific	2,041	2,276	+11.5	+8.7	8,267	8,849	+7.0	+7.7
Latin America	1,931	2,186	+13.2	+10.6	5,900	6,632	+12.4	+17.1
EBITDA[1]	**2,024**	**1,731**	**−14.5**		**(2,910)**	**6,409**	**.**	
Special items[1]	(368)	(664)			(14,371)	(4,770)		
EBITDA before special items[1]	**2,392**	**2,395**	**+0.1**		**11,461**	**11,179**	**−2.5**	
EBITDA margin before special items[1]	23.9%	21.5%			27.7%	25.4%		
EBIT[1]	**1,515**	**2,021**	**+33.4**		**(16,169)**	**3,353**	**.**	
Special items[1]	67	638			(23,264)	(3,942)		
EBIT before special items[1]	**1,448**	**1,383**	**−4.5**		**7,095**	**7,295**	**+2.8**	
Financial result	**(142)**	**(524)**	**.**		**(1,081)**	**(1,307)**	**+20.9**	
Net income (from continuing and discontinued operations)	**308**	**1,161**	**.**		**(10,495)**	**1,000**	**.**	
Earnings per share[1] from continuing and discontinued operations (€)	**0.32**	**1.18**	**.**		**(10.68)**	**1.02**	**.**	
Core earnings per share[1] from continuing operations (€)	**1.32**	**1.26**	**−4.5**		**6.39**	**6.51**	**+1.9**	
Net cash provided by operating activities (from continuing and discontinued operations)	**751**	**3,046**	**.**		**4,903**	**5,089**	**+3.8**	
Free cash flow[1]	**(503)**	**1,535**	**.**		**1,343**	**1,415**	**+5.4**	
Net financial debt (at end of period)	**30,045**	**33,137**	**+10.3**		**30,045**	**33,137**	**+10.3**	
Cash flow-relevant capital expenditures (from continuing and discontinued operations)	**893**	**1,140**	**+27.7**		**2,418**	**2,611**	**+8.0**	
Research and development expenses	**1,291**	**1,012**	**−21.6**		**7,126**	**5,412**	**−24.1**	
Depreciation, amortization and impairment losses/loss reversals	**509**	**(290)**	**.**		**13,259**	**3,056**	**−77.0**	
Number of employees (at end of period)	**99,538**	**99,637**	**+0.1**		**99,538**	**99,637**	**+0.1**	
Personnel expenses (including pension expenses)	**2,279**	**3,016**	**+32.3**		**9,769**	**11,798**	**+20.8**	

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

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

Group sales up significantly after adjusting for currency and portfolio effects

Sales of the Bayer Group rose to €44,081 million (Fx & portfolio adj. +8.9%; reported +6.5%) in 2021. Germany accounted for €2,545 million of this figure.

Sales at Crop Science increased by 11.1% (Fx & portfolio adj.) to €20,207 million, with business up in all regions. We registered double-digit percentage gains in Latin America and Asia/Pacific, and also delivered very strong performance in North America and Europe/Middle East/Africa. Sales at Pharmaceuticals climbed by 7.4% (Fx & portfolio adj.) to €18,349 million, as business recovered from the impact of the COVID-19 restrictions, especially in the areas of ophthalmology, radiology and women's healthcare. Our opthalmology business was also able to capture market share. Sales at Consumer Health advanced by 6.5% (Fx & portfolio adj.) to €5,293 million. The greater focus on health and prevention in connection with the COVID-19 pandemic led to higher demand, especially in the Nutritionals category. Growth was also driven by the launch of innovative products. In the Reconciliation, sales fell by 11.6% to €232 million.

Earnings

EBITDA before special items of the Bayer Group fell by 2.5% to €11,179 million (2020: €11,461 million). Earnings were diminished by an increase in the cost of goods sold, which was partly due to inflation, and negative currency effects of €507 million, among other factors. At Crop Science, EBITDA before special items increased by 3.6% to €4,698 million (2020: €4,536 million), mainly due to price increases and expanded volumes, as well as contributions from ongoing efficiency programs. Earnings were primarily diminished by an increase in the cost of goods sold. At Pharmaceuticals, EBITDA before special items declined by 3.9% to €5,779 million (2020: €6,016 million). The division's strong business performance was insufficient to offset an increase in marketing costs, which was largely attributable to the launch of Kerendia™, Verquvo™ and Nubeqa™, and a rise in research and development expenses, which was partly related to our cell and gene therapy unit. EBITDA before special items at Consumer Health increased by 6.8% to €1,190 million (2020: €1,114 million), mainly due to the division's strong business performance and continuous cost management efforts. In the Reconciliation, EBITDA before special items came in at minus €488 million (2020: minus €205 million).

See also A 2.3

EBITDA in 2021 came in at €6,409 million (2020: minus €2,910 million). **Depreciation, amortization, impairment losses and impairment loss reversals** led to net expenses of €3,056 million (2020: €13,259 million), with intangible assets accounting for €1,482 million (2020: €11,570 million) and property, plant and equipment for €1,574 million (2020: €1,689 million). Impairment losses and impairment loss reversals led to net gains of €684 million (2020: net expenses of €8,976 million), with intangible assets accounting for a gain of €741 million (2020: expense of €8,948 million).

See also A 2.3

The impairment loss reversals mainly related to the Crop Science Division, and concerned the cash-generating units Corn Seed & Traits (€281 million), Soybean Seed & Traits (€602 million) and glyphosate (€166 million). An impairment loss of €198 million was recorded in the cash-generating unit canola in 2021. The impairment loss reversals were largely attributable to improved business prospects. Changes in the interest rate and currency environment were the primary negative factor.

Net impairment loss reversals of €844 million (2020: net impairment losses of €8,898 million) and accelerated depreciation of €16 million (2020: €1 million) were included in special items.

EBIT before special items rose by 2.8% to €7,295 million (2020: €7,095 million). **EBIT** amounted to €3,353 million (2020: minus €16,169 million) after net special charges of €3,942 million (2020: €23,264 million) that mainly resulted from the allocation to provisions in connection with the Roundup™ litigation as part of the glyphosate litigations. Further special charges were attributable in particular to the established restructuring programs in the Reconciliation and the Pharmaceuticals Division. As outlined above, the impairment loss reversals were primarily attributable to the Crop Science Division.

In 2021, the following special effects were taken into account in calculating EBIT and EBITDA before special items.

A 2.2.1/2

Special Items[1] by Category

€ million	EBIT Q4 2020	EBIT Q4 2021	EBIT 2020	EBIT 2021	EBITDA Q4 2020	EBITDA Q4 2021	EBITDA 2020	EBITDA 2021
Total special items	**67**	**638**	**(23,264)**	**(3,942)**	**(368)**	**(664)**	**(14,371)**	**(4,770)**
Restructuring	(83)	(415)	(757)	(1,322)	(209)	(407)	(884)	(1,304)
of which in the Reconciliation	(132)	(162)	(573)	(570)	(131)	(162)	(571)	(570)
Acquisition/integration	(44)	5	(81)	(19)	(45)	5	(81)	(19)
of which in the Reconciliation	–	(1)	(2)	(1)	(1)	(1)	(2)	(1)
Divestments	(10)	(41)	(52)	5	(10)	(34)	(52)	12
of which in the Reconciliation	(11)	–	(45)	–	(11)	–	(45)	–
Litigations/legal risks	(27)	(99)	(13,163)	(3,310)	(27)	(99)	(13,163)	(3,310)
of which in the Reconciliation	(27)	(80)	(858)	(34)	(27)	(80)	(858)	(34)
Impairment losses/loss reversals[2]	284	1,309	(9,158)	841	(24)	(8)	(138)	(12)
Other	(53)	(121)	(53)	(137)	(53)	(121)	(53)	(137)
of which in the Reconciliation	–	(52)	–	(52)	–	(52)	–	(52)

2020 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 up slightly year on year, at €6.51 (2020: €6.39; +1.9%), driven by the positive earnings contribution from the Crop Science Division and the favorable development of the financial result after special items. These effects were partly offset by lower earnings at Pharmaceuticals.

Earnings per share (total) came in at €1.02 in 2021 (2020: minus €10.68), and were diminished by the allocation to provisions in connection with the glyphosate litigations, as well as by further special charges relating to restructuring programs.

A 2.2.1/3

Core Earnings per Share[1]

€ million	Q4 2020	Q4 2021	2020	2021
EBIT[1] (as per income statements)	**1,515**	**2,021**	**(16,169)**	**3,353**
Amortization and impairment losses/loss reversals on goodwill and other intangible assets	254	(651)	11,570	1,482
Impairment losses/loss reversals on property, plant and equipment, and accelerated depreciation included in special items	(110)	(34)	29	74
Special items (other than accelerated depreciation, amortization and impairment losses/loss reversals)	368	664	14,371	4,770
Core EBIT[1]	**2,027**	**2,000**	**9,801**	**9,679**
Financial result (as per income statements)	(142)	(524)	(1,081)	(1,307)
Special items in the financial result[2]	(197)	137	(469)	95
Income taxes (as per income statements)	(987)	(327)	1,689	(1,024)
Special items in income taxes	–	–	–	–
Tax effects related to amortization, impairment losses/loss reversals and special items	600	(39)	(3,640)	(1,021)
Income after income taxes attributable to noncontrolling interest (as per income statements)	(3)	(9)	(8)	(22)
Above-mentioned adjustments attributable to noncontrolling interest	–	–	(12)	(1)
Core net income from continuing operations	**1,298**	**1,238**	**6,280**	**6,399**
Shares (million)				
Weighted average number of shares	982.42	982.42	982.42	982.42
€				
Core earnings per share from continuing operations[1]	**1.32**	**1.26**	**6.39**	**6.51**

[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."
[2] Primarily comprising currency effects in connection with dividend payments in Brazil (2020: changes in the fair value of our interests in Elanco and Covestro)

Bayer Group – Other Earnings Parameters

A 2.2.1/4

Bayer Group Summary Income Statements

€ million	Q4 2020	Q4 2021	Change (%)	2020	2021	Change (%)
Net sales	9,995	11,118	+11.2	41,400	44,081	+6.5
Cost of goods sold	(3,669)	(3,685)	+0.4	(19,138)	(16,816)	–12.1
Selling expenses	(2,827)	(3,505)	+24.0	(13,053)	(12,363)	–5.3
Research and development expenses	(1,291)	(1,012)	–21.6	(7,126)	(5,412)	–24.1
General administration expenses	(664)	(786)	+18.4	(2,879)	(2,962)	+2.9
Other operating income / (expenses)	(29)	(109)	.	(15,373)	(3,175)	–79.3
EBIT[1]	**1,515**	**2,021**	**+33.4**	**(16,169)**	**3,353**	**.**
Financial result	**(142)**	**(524)**	**.**	**(1,081)**	**(1,307)**	**+20.9**
Income before income taxes	**1,373**	**1,497**	**+9.0**	**(17,250)**	**2,046**	**.**
Income taxes	(987)	(327)	–66.9	1,689	(1,024)	.
Income from continuing operations after taxes	386	1,170	.	(15,561)	1,022	.
Income from discontinued operations after taxes	(75)	–		5,074	–	
Income after income taxes (total)	**311**	**1,170**	**.**	**(10,487)**	**1,022**	**.**
of which attributable to noncontrolling interest	3	9	.	8	22	-
of which attributable to Bayer AG stockholders (net income)	**308**	**1,161**	**.**	**(10,495)**	**1,000**	**.**

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

Functional costs

In the prior year, functional costs were heavily impacted by special items. 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[1] by Functional Cost

€ million	EBIT Q4 2020	EBIT Q4 2021	EBIT 2020	EBIT 2021	EBITDA Q4 2020	EBITDA Q4 2021	EBITDA 2020	EBITDA 2021
Total special items	**67**	**638**	**(23,264)**	**(3,942)**	**(368)**	**(664)**	**(14,371)**	**(4,770)**
Cost of goods sold	90	661	(3,411)	229	(38)	(66)	(233)	(199)
Selling expenses	202	(99)	(1,433)	(89)	(37)	(216)	(100)	(315)
Research and development expenses	(8)	442	(2,242)	(86)	(76)	(16)	(110)	(260)
General administration expenses	(175)	(198)	(709)	(705)	(175)	(198)	(708)	(705)
Other operating income/(expenses)	(42)	(168)	(15,469)	(3,291)	(42)	(168)	(13,220)	(3,291)

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

The cost of goods sold fell by 12.1% to €16,816 million in 2021, mainly due to the significantly lower special charges recorded in the Crop Science Division. The ratio of the cost of goods sold to total sales decreased sharply year on year, falling to 38.1% (2020: 46.2%). After adjusting for special items, the cost of goods sold rose by 8.4%, mainly at Crop Science and Pharmaceuticals, due primarily to inflation.

Selling expenses fell by 5.3% to €12,363 million. There was a significant decline in selling expenses at Crop Science due to the special charges recognized in the previous year in connection with impairments. Selling expenses accounted for 28.0% (2020: 31.5%) of sales. After adjusting for special items, selling expenses increased by 5.6%, mainly at Pharmaceuticals – largely due to the launch of new products – and at Crop Science.

Research and development (R&D) expenses decreased by 24.1% to €5,412 million. The ratio of R&D expenses to sales declined to 12.3% (2020: 17.2%) due to lower special charges at Crop Science compared with the previous year. Adjusted for special items, R&D expenses increased by 9.0%, particularly at Pharmaceuticals.

General administration expenses increased by 2.9% to €2,962 million. This increase was mainly attributable to the addition to provisions for short-term variable compensation. The ratio of general administration expenses to total sales decreased to 6.7% (2020: 7.0%).

The balance of other operating expenses and other operating income came in at minus €3,175 million, representing a significant, 79.3% improvement against the prior year (2020: minus €15,373 million). The 2021 figure mainly reflected the allocations to provisions in connection with the glyphosate litigations.

Financial result and income before income taxes

After a financial result of minus €1,307 million (2020: minus €1,081 million), income before income taxes amounted to €2,046 million (2020: minus €17,250 million). The financial result comprised income from investments in affiliated companies of €23 million (2020: €406 million), net interest expense of €930 million (2020: €1,292 million), a net exchange loss of €385 million (2020: €216 million), interest cost of €71 million (2020: €102 million) for pension and other provisions, and net other financial income of €56 million (2020: €123 million). The financial result included net special charges of €95 million (2020: net special gains of €469 million) that resulted primarily from currency effects related to dividend payments in Brazil.

Income taxes

Income tax expense of €1,024 million was recorded in 2021 (2020: income from income taxes of €1,689 million). The increase in tax expense was largely attributable to the year-on-year decline in special charges.

Income from discontinued operations after income taxes

Income from discontinued operations after income taxes amounted to €0 million (2020: €5,074 million). The prior-year figure contained proceeds from the divestment of the Animal Health business unit.

Net income

After income tax expense, income from discontinued operations after income taxes, and income attributable to noncontrolling interest, net income in 2021 came to €1,000 million (2020: net loss of €10,495 million).

2.2.2 Business Development by Division

Crop Science

Encouraging market environment

The global seed and crop protection market grew strongly in 2021 (Fx adj. +7%; 2020: +4%). Continued strong global demand for corn and soybeans encouraged further acreage growth in Latin America as well as the application of premium crop protection across the globe. Growth was also driven by higher prices for agrochemicals, in particular nonselective herbicides, reflecting high cost inflation and supply bottlenecks.

A 2.2.2/1

Key Data – Crop Science

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2020	Q4 2021	Reported	Fx & p adj.	2020	2021	Reported	Fx & p adj.
Sales	**4,176**	**4,690**	**+12.3**	**+8.8**	**18,840**	**20,207**	**+7.3**	**+11.1**
Change in sales[1]								
Volume	+4.1%	−1.1%			+1.5%	+5.6%		
Price	+0.2%	+9.9%			−0.2%	+5.5%		
Currency	−14.5%	+3.5%			−6.3%	−3.8%		
Portfolio	0.0%	0.0%			0.0%	0.0%		
Sales by region								
Europe/Middle East/Africa	545	573	+5.1	+3.9	4,053	4,205	+3.8	+6.2
North America	1,555	1,695	+9.0	+3.8	8,367	8,721	+4.2	+9.3
Asia/Pacific	499	614	+23.0	+20.2	1,917	2,183	+13.9	+15.2
Latin America	1,577	1,808	+14.6	+12.0	4,503	5,098	+13.2	+17.2
EBITDA[1]	**538**	**715**	**+32.9**		**(6,600)**	**940**	**.**	
Special items[1]	(56)	(46)	–		(11,136)	(3,758)		
EBITDA before special items[1]	**594**	**761**	**+28.1**		**4,536**	**4,698**	**+3.6**	
EBITDA margin before special items[1]	14.2%	16.2%			24.1%	23.2%		
EBIT[1]	**91**	**1,435**	**.**		**(18,629)**	**(495)**	**−97.3**	
Special items[1]	54	1,263			(20,420)	(2,915)		
EBIT before special items[1]	**37**	**172**	**.**		**1,791**	**2,420**	**+35.1**	
Net cash provided by (used in) operating activities	**(577)**	**2,335**	**.**		**99**	**1,272**	**.**	
Cash flow-relevant capital expenditures	404	470	+16.3		1,103	1,019	−7.6	
Research and development expenses[2]	403	138	−65.8		4,138	2,029	−51.0	

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

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

[2] The elevated research and development expenses in 2020 were largely attributable to special charges in connection with impairment charges.

Sales

Sales at Crop Science advanced by a significant 11.1% (Fx & portfolio adj.) in 2021 to €20,207 million, with business up in all regions. We registered double-digit percentage gains in Latin America and Asia/Pacific, and posted significant growth in North America and Europe/Middle East/Africa.

A 2.2.2/2

Sales by Strategic Business Entity

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2020	Q4 2021	Reported	Fx & p adj.	2020	2021	Reported	Fx & p adj.
Crop Science	**4,176**	**4,690**	**+12.3**	**+8.8**	**18,840**	**20,207**	**+7.3**	**+11.1**
Corn Seed & Traits	980	1,042	+6.3	+2.1	4,970	5,162	+3.9	+9.2
Herbicides	1,074	1,302	+21.2	+17.2	4,740	5,328	+12.4	+15.4
Fungicides	669	706	+5.5	+3.8	2,639	2,924	+10.8	+13.8
Soybean Seed & Traits	505	544	+7.7	+4.0	1,956	2,164	+10.6	+14.9
Insecticides	312	373	+19.6	+17.4	1,370	1,417	+3.4	+6.6
Environmental Science	237	259	+9.3	+6.3	1,070	1,103	+3.1	+6.6
Vegetable Seeds	179	171	−4.5	−6.6	640	653	+2.0	+4.3
Other	220	293	+33.2	+27.6	1,455	1,456	+0.1	+4.6

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** rose in all regions. Our business in Latin America and North America in particular benefited from an increase in acreages that was driven by positive market developments as well as greater market penetration. We also implemented price increases worldwide.
// We recorded encouraging sales gains at **Herbicides**, primarily due to price increases for our glyphosate-based products across all regions as well as higher volumes.
// We also significantly increased sales at **Fungicides**, mainly driven by higher Fox Xpro™ volumes in Latin America. Sales also rose in the Asia/Pacific and Europe/Middle East/Africa regions due to favorable weather conditions, whereas business in North America decreased.
// **Soybean Seed & Traits** recorded double-digit percentage growth in Latin America and North America due to an increase in volumes and prices.
// Sales at **Insecticides** increased year on year due to higher volumes, primarily in Latin America thanks to our Curbix™ product, but also in Asia/Pacific and North America. However, business was down in Europe/Middle East/Africa due to the loss of a registration.
// Sales at **Environmental Science** rose in all regions, with growth in North America driven by higher demand and price increases for Roundup™.
// Sales at **Vegetable Seeds** increased in Latin America, Asia/Pacific and North America due to higher volumes and prices.
// Sales in the reporting unit **"Other"** advanced year on year, largely due to higher acreages in Asia/Pacific in our cotton seed business.

Earnings

EBITDA before special items at Crop Science increased by 3.6% in 2021 to €4,698 million (2020: €4,536 million). The growth in earnings was mainly driven by higher prices and volumes as well as contributions from ongoing efficiency programs. By contrast, earnings were diminished by an increase in costs, particularly in the cost of goods sold, that was mainly due to high inflation, as well as by negative currency effects of €387 million. The EBITDA margin before special items declined by 0.9 percentage points to 23.2% (2020: 24.1%).

EBIT came in at minus €495 million in 2021 (2020: minus €18,629 million) after special charges of €2,915 million (2020: €20,420 million) that primarily related to provisions in connection with the Roundup™ litigation as part of the glyphosate litigations. In addition, impairment loss reversals were recorded in the cash-generating units Corn Seed & Traits, Soybean Seed & Traits, and glyphosate.

A 2.2.2/3

Special Items[1] Crop Science

€ million	EBIT Q4 2020	EBIT Q4 2021	EBIT 2020	EBIT 2021	EBITDA Q4 2020	EBITDA Q4 2021	EBITDA 2020	EBITDA 2021
Restructuring	(27)	(37)	(201)	(211)	(28)	(36)	(190)	(208)
Acquisition/integration	(9)	(8)	(44)	(12)	(9)	(8)	(44)	(12)
Divestments	1	(37)	(7)	(77)	1	(30)	(7)	(70)
Litigations/legal risks	–	6	(10,762)	(3,466)	–	6	(10,762)	(3,466)
Impairment losses/loss reversals	89	1,317	(9,406)	852	(20)	–	(133)	(1)
Other	–	22	–	(1)	–	22	–	(1)
Total special items	**54**	**1,263**	**(20,420)**	**(2,915)**	**(56)**	**(46)**	**(11,136)**	**(3,758)**

2020 figures restated

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

Fourth quarter of 2021

Sales

Sales advanced by 8.8% (Fx & portfolio adj.) to €4,690 million in the fourth quarter. Business was up in all regions, with sales rising by double-digit percentages in Asia/Pacific and Latin America. Sales at **Corn Seed & Traits** increased in Latin America due to higher volumes and prices. At **Herbicides,** sales rose year on year due to an increase in prices across all regions, especially for our glyphosate-based products. The growth in sales at **Fungicides** was mainly driven by higher Fox Xpro™ volumes in Latin America. We increased sales at **Soybean Seed & Traits** thanks to higher prices in Latin America. Sales at **Insecticides** rose significantly, mainly due to shifts in demand. Business at **Environmental Science** was up year on year, largely owing to increased demand for Roundup™ in North America. Sales at **Vegetable Seeds** decreased in all regions, primarily due to shifts in demand into the third quarter. Sales in the reporting unit **"Other"** advanced year on year, largely driven by growth in our cotton seed business in the Asia/Pacific and North America regions.

Earnings

EBITDA before special items rose by 28.1% in the fourth quarter to €761 million (Q4 2020: €594 million). The growth in earnings was attributable to higher prices and contributions from ongoing efficiency programs. By contrast, earnings were diminished by an increase in costs, particularly in the cost of goods sold. In addition, we recorded a positive currency effect of €4 million. The EBITDA margin before special items came in at 16.2%.

EBIT increased to €1,435 million in the fourth quarter (Q4 2020: €91 million). This figure included special gains of €1,263 million (Q4 2020: €54 million) that mainly related to the impairment loss reversals outlined in the full-year commentary above.

Pharmaceuticals

Pharmaceuticals market shows recovery

The pharmaceuticals market grew by 6% (Fx adj.) in 2021 (2020: 3%), driven by a general recovery from the severe restrictions introduced to combat the COVID-19 pandemic. Catch-up effects and a normalization in the number of treatments and diagnostic tests performed resulted in a significant increase in volumes. In addition, COVID-19 vaccines made a substantial contribution to market growth.

A 2.2.2/4

Key Data – Pharmaceuticals

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2020	Q4 2021	Reported	Fx & p adj.	2020	2021	Reported	Fx & p adj.
Sales	**4,476**	**4,951**	**+10.6**	**+7.6**	**17,243**	**18,349**	**+6.4**	**+7.4**
Change in sales[1]								
Volume	+7.9%	+8.3%			+4.8%	+9.3%		
Price	–7.4%	–0.7%			–6.3%	–1.9%		
Currency	–4.9%	+2.4%			–2.5%	–1.4%		
Portfolio	0.0%	+0.6%			0.0%	+0.4%		
Sales by region								
Europe/Middle East/Africa	1,918	2,127	+10.9	+9.5	6,940	7,438	+7.2	+7.9
North America	975	1,133	+16.2	+9.3	3,855	4,155	+7.8	+8.6
Asia/Pacific	1,357	1,460	+7.6	+4.9	5,598	5,834	+4.2	+4.8
Latin America	226	231	+2.2	+0.8	850	922	+8.5	+15.2
EBITDA[1]	**1,422**	**1,208**	**–15.0**		**4,311**	**5,470**	**+26.9**	
Special items[1]	(117)	(298)			(1,705)	(309)		
EBITDA before special items[1]	**1,539**	**1,506**	**–2.1**		**6,016**	**5,779**	**–3.9**	
EBITDA margin before special items[1]	34.4%	30.4%			34.9%	31.5%		
EBIT[1]	**1,308**	**938**	**–28.3**		**3,467**	**4,469**	**+28.9**	
Special items[1]	9	(305)			(1,565)	(324)		
EBIT before special items[1]	**1,299**	**1,243**	**–4.3**		**5,032**	**4,793**	**–4.7**	
Net cash provided by operating activities	**1,258**	**595**	**–52.7**		**4,064**	**3,493**	**–14.1**	
Cash flow-relevant capital expenditures	368	516	+40.2		915	1,178	+28.7	
Research and development expenses	816	792	–2.9		2,743	3,139	+14.4	

2020 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 rose by 7.4% (Fx & portfolio adj.) to €18,349 million in 2021. Our ophthalmology, radiology and women’s healthcare businesses recovered from the impact of the COVID-19 restrictions, with this positive development more than offsetting price-related declines in sales due to tender procedures in China. The ophthalmology business additionally benefited from growth in market share and the launch of Eylea™ prefilled syringes. Our cancer drug Nubeqa™ also performed well, with sales of €219 million, driven mainly by higher volumes in the United States. In addition, we initiated the U.S. market launch of Kerendia™, our product for the treatment of patients with chronic kidney disease and type 2 diabetes, in the third quarter.

A 2.2.2/5

Best-Selling Pharmaceuticals Products

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2020	Q4 2021	Reported	Fx & p adj.	2020	2021	Reported	Fx & p adj.
Xarelto™	1,212	1,247	+ 2.9	+ 1.2	4,515	4,735	+ 4.9	+ 6.0
Eylea™	669	773	+ 15.5	+ 13.7	2,468	2,918	+ 18.2	+ 18.7
Mirena™/Kyleena™/Jaydess™	288	282	– 2.1	– 5.6	1,081	1,170	+ 8.2	+ 11.3
Kogenate™/Kovaltry™/Jivi™	201	219	+ 9.0	+ 6.1	851	823	– 3.3	– 1.6
Adalat™	138	207	+ 50.0	+ 40.3	613	763	+ 24.5	+ 21.3
YAZ™/Yasmin™/Yasminelle™	168	178	+ 6.0	+ 3.4	670	740	+ 10.4	+ 13.2
Adempas™	261	328	+ 25.7	+ 24.0	628	738	+ 17.5	+ 19.6
Aspirin™ Cardio	169	170	+ 0.6	– 3.3	639	678	+ 6.1	+ 6.0
Stivarga™	109	120	+ 10.1	+ 7.4	475	477	+ 0.4	+ 2.5
CT Fluid Delivery[2]	106	120	+ 13.2	+ 9.7	393	449	+ 14.2	+ 17.0
Nexavar™	159	91	– 42.8	– 41.3	639	435	– 31.9	– 30.9
Gadovist™ product family	102	112	+ 9.8	+ 8.2	385	418	+ 8.6	+ 11.1
Ultravist™	80	97	+ 21.3	+ 18.3	303	357	+ 17.8	+ 18.9
Betaferon™/Betaseron™	86	93	+ 8.1	+ 6.1	404	337	– 16.6	– 14.4
Xofigo™	61	66	+ 8.2	+ 4.2	262	261	– 0.4	+ 2.7
Total best-selling products	**3,809**	**4,103**	**+ 7.7**	**+ 5.4**	**14,326**	**15,299**	**+ 6.8**	**+ 8.0**
Proportion of Pharmaceuticals sales	85%	83%			83%	83%		

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

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

[2] 2020 figures restated; the CT Fluid Delivery product family comprises injection systems marketed primarily under the Stellant™ brand.

// Sales of our oral anticoagulant **Xarelto™** continued to grow. We registered higher volumes in China and Russia, but also experienced price declines that mainly resulted from tender procedures in China. Our license revenues – recognized as sales – in the United States, where Xarelto™ is marketed by a subsidiary of Johnson & Johnson, were up against the previous year.

// Sales of our ophthalmology drug **Eylea™** advanced significantly, as business recovered from the impact of the COVID-19 restrictions, especially in Europe. We also recorded a strong increase in volumes as we expanded market share in a growing market, with the ongoing launch of Eylea™ prefilled syringes also providing an encouraging contribution.

// The considerable growth in sales of our long-term contraceptives in the **Mirena™** product family was largely due to the recovery of business in the United States, Brazil and China.

// Business with **Adalat™**, our product for the treatment of heart disease, benefited from strong volume growth in China.

// Sales of our **YAZ™/Yasmin™/Yasminelle™** oral contraceptives advanced, owing to the expansion of sales activities in China and strong growth in volumes in Japan.

// 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. A further milestone in this collaboration was reached in the fourth quarter of 2021, with full-year sales benefiting as a result.

// Our cancer drug **Nexavar™** experienced a decrease in volumes, particularly in China, where we faced strong competition and modified tender procedures for various classes of active ingredients.

// Our radiology business with the **CT Fluid Delivery, Gadovist™ and Ultravist™** product lines expanded significantly due to a normalization in the number of radiological treatments being carried out following the substantial COVID-19 restrictions in the previous year.

// Sales of our multiple sclerosis treatment **Betaferon™/Betaseron™** declined, especially in the United States, due to continued competitive pressure.

Earnings

EBITDA before special items at Pharmaceuticals declined by 3.9% to €5,779 million in 2021, resulting in a margin of 31.5%. The division's strong business performance was insufficient to fully offset an increase in marketing costs, which was largely attributable to the launch of Kerendia™, Verquvo™ and Nubeqa™, and a rise in research and development expenses, which was partly related to our cell and gene therapy unit. An increase in the cost of goods sold and negative currency effects of €77 million also weighed on earnings.

EBIT at Pharmaceuticals rose by a substantial 28.9% to €4,469 million after net special charges of €324 million (2020: €1,565 million) that primarily related to restructuring and the measurement of a contingent consideration at fair value. By contrast, we registered a special gain from a patent dispute involving our product Jivi™.

A 2.2.2/6

Special Items[1] Pharmaceuticals

€ million	EBIT Q4 2020	EBIT Q4 2021	EBIT 2020	EBIT 2021	EBITDA Q4 2020	EBITDA Q4 2021	EBITDA 2020	EBITDA 2021
Restructuring	101	(191)	71	(495)	(25)	(184)	(69)	(480)
Acquisition/integration	(35)	14	(35)	(6)	(35)	14	(35)	(6)
Divestments	–	(4)	–	82	–	(4)	–	82
Litigations/legal risks	–	(25)	(1,543)	190	–	(25)	(1,543)	190
Impairment losses/loss reversals	(4)	(8)	(5)	(11)	(4)	(8)	(5)	(11)
Other	(53)	(91)	(53)	(84)	(53)	(91)	(53)	(84)
Total special items	**9**	**(305)**	**(1,565)**	**(324)**	**(117)**	**(298)**	**(1,705)**	**(309)**

2020 figures restated

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

Fourth quarter of 2021

Sales

Sales at Pharmaceuticals rose by 7.6% (Fx & portfolio adj.) to €4,951 million in the fourth quarter. Significant sales gains for important products more than offset the negative effects arising from the volume-based procurement policy in China.

We registered an expansion in volumes for **Xarelto™**, particularly in Germany and Russia. However, we also experienced price-related declines, especially in China, which resulted in sales remaining level with the prior-year quarter overall. Sales of **Eylea™** were up considerably year on year in all regions, particularly in Europe. The recovery of our business from the impact of the COVID-19 restrictions, as outlined above, had a positive effect. We were also able to capture market share, due partly to the ongoing launch of Eylea™ prefilled syringes. Our business with **Adalat™** benefited from an encouraging expansion of volumes in China. 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 cancer drug **Nexavar™** continued to decline sharply due to strong competition, especially in China. Our radiology business with the **CT Fluid Delivery, Gadovist™ and Ultravist™** product lines expanded significantly due to a normalization in the number of radiological treatments being carried out.

Earnings

EBITDA before special items at Pharmaceuticals declined by 2.1% to €1,506 million in the fourth quarter (Q4 2020: €1,539 million), resulting in a margin of 30.4%. The division's strong business performance was insufficient to fully offset an increase in marketing costs, which was largely attributable to the launch of Kerendia™, Verquvo™ and Nubeqa™, and a rise in research and development expenses, which was partly related to our cell and gene therapy unit. An increase in the cost of goods sold also weighed on earnings.

EBIT at Pharmaceuticals declined by a substantial 28.3% to €938 million after special charges of €305 million (Q4 2020: special gains of €9 million) that primarily related to restructuring and the measurement of a contingent consideration at fair value.

Consumer Health

Stable market growth

Growth of the global consumer health market in 2021 was around 4% (2020: 4%). While overall market growth remained stable, we saw an increase in demand for products that help support people's immune systems and healthcare needs, with this trend mainly benefiting the nutritionals category. On the other hand, the ongoing social distancing and hygiene measures led to a decline in the incidence of flu around the world in the first half of the year. Despite recovering in the second half, demand for cough and cold products was subdued for the full year overall.

A 2.2.2/7

Key Data – Consumer Health

			Change (%)[1]				Change (%)[1]	
€ million	Q4 2020	Q4 2021	Reported	Fx & p adj.	2020	2021	Reported	Fx & p adj.
Sales	**1,250**	**1,405**	**+12.4**	**+8.6**	**5,054**	**5,293**	**+4.7**	**+6.5**
Changes in sales[1]								
Volume	+0.7%	+4.6%			+3.3%	+3.4%		
Price	+2.4%	+4.0%			+1.9%	+3.1%		
Currency	–8.4%	+3.2%			–4.4%	–2.7%		
Portfolio	–1.2%	+0.6%			–8.3%	+0.9%		
Sales by region								
Europe/Middle East/Africa	452	486	+7.5	+6.6	1,739	1,779	+2.3	+4.6
North America	492	573	+16.5	+10.1	2,026	2,075	+2.4	+3.3
Asia/Pacific	178	200	+12.4	+7.6	744	829	+11.4	+10.5
Latin America	128	146	+14.1	+11.1	545	610	+11.9	+19.5
EBITDA[1]	**233**	**287**	**+23.2**		**1,060**	**1,144**	**+7.9**	
Special items[1]	(25)	(25)			(54)	(46)		
EBITDA before special items[1]	**258**	**312**	**+20.9**		**1,114**	**1,190**	**+6.8**	
EBITDA margin before special items[1]	20.6%	22.2%			22.0%	22.5%		
EBIT[1]	**352**	**201**	**–42.9**		**992**	**808**	**–18.5**	
Special items[1]	174	(25)			199	(46)		
EBIT before special items[1]	**178**	**226**	**+27.0**		**793**	**854**	**+7.7**	
Net cash provided by operating activities	**276**	**316**	**+14.5**		**987**	**1,030**	**+4.4**	
Cash flow-relevant capital expenditures	75	89	+18.7		159	196	+23.3	
Research and development expenses	53	61	+15.1		195	199	+2.1	

2020 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 advanced by 6.5% (Fx & portfolio adj.) in 2021 to €5,293 million, as the division once again reported significant gains across all regions against a very strong prior year. 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. Growth was also driven by the launch of innovative products across all categories.

A 2.2.2/8

Sales by Category

€ million	Q4 2020	Q4 2021	Change (%)[1] Reported	Change (%)[1] Fx & p adj.	2020	2021	Change (%)[1] Reported	Change (%)[1] Fx & p adj.
Consumer Health	**1,250**	**1,405**	**+12.4**	**+8.6**	**5,054**	**5,293**	**+4.7**	**+6.5**
Nutritionals	331	374	+13.0	+7.4	1,313	1,471	+12.0	+11.7
Allergy & Cold	253	299	+18.2	+13.8	1,080	1,036	–4.1	–2.1
Dermatology	259	284	+9.7	+7.3	1,086	1,122	+3.3	+5.1
Pain & Cardio	207	221	+6.8	+3.9	807	834	+3.3	+8.0
Digestive Health	186	211	+13.4	+10.6	717	771	+7.5	+9.7
Other	14	16	+14.3	+7.5	51	59	+15.7	+17.4

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

// In **Europe/Middle East/Africa**, sales rose by 4.6% (Fx & portfolio adj.) to €1,779 million. Growth was mainly driven by high demand in the Dermatology category, which benefited from the Bepanthen™ product innovation for daily treatment of dry skin. We also registered significant growth in Nutritionals due to a continuous increase in demand. Sales in the Digestive Health category also benefited from product innovation. Our business with cough and cold products registered a decline in sales in the first half of the year, driven by the increased protection and hygiene measures.

// Sales in **North America** advanced by 3.3% (Fx & portfolio adj.) to €2,075 million. Business in our Nutritionals category increased significantly against a very strong prior year, driven by our One A Day™ vitamins. We also registered encouraging growth in the Digestive Health and Allergy & Cold categories. Sales of our allergy product Claritin™ increased due to the stronger allergy season, while our cough and cold business benefited from a product line extension. By contrast, the Dermatology category saw a decline in sales.

// Business in the **Asia/Pacific** region expanded by 10.5% (Fx & portfolio adj.) to €829 million. This performance was largely driven by an increase in sales in the Nutritionals category, with Elevit™ in particular posting strong growth. The integration of our Consumer Health business in India as part of our growth strategy also had a positive impact, particularly in the Pain & Cardio category.

// In **Latin America**, sales climbed by a significant 19.5% (Fx & portfolio adj.) to €610 million, with an increase in demand driving substantial growth in the Pain & Cardio and Nutritionals categories in particular. Business in the Dermatology category benefited from our Bepanthen™ product innovation.

Earnings

EBITDA before special items increased by 6.8% to €1,190 million in 2021 (2020: €1,114 million), with the EBITDA margin before special items improving by 0.5 percentage points to 22.5%. Earnings primarily benefited from our strong business performance and continuous price and cost management efforts, which offset an inflation-related increase in costs and enabled us to invest in the launch of innovative products. In addition, earnings were diminished by negative currency effects of €39 million.

EBIT at Consumer Health came in at €808 million (2020: €992 million) after special charges of €46 million (2020: special gains of €199 million) that primarily related to restructuring.

A 2.2.2/9

Special Items[1] Consumer Health

€ million	EBIT Q4 2020	EBIT Q4 2021	EBIT 2020	EBIT 2021	EBITDA Q4 2020	EBITDA Q4 2021	EBITDA 2020	EBITDA 2021
Restructuring	(25)	(25)	(54)	(46)	(25)	(25)	(54)	(46)
Impairment losses/loss reversals	199	–	253	–	–	–	–	–
Total special items	**174**	**(25)**	**199**	**(46)**	**(25)**	**(25)**	**(54)**	**(46)**

2020 figures restated
[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."

Fourth quarter of 2021

Sales

Sales at Consumer Health rose by a significant 8.6% (Fx & portfolio adj.) to €1,405 million in the fourth quarter of 2021, with business up in all categories. Sales of our cough and cold products increased compared with the prior-year period. The encouraging development in the Nutritionals category in the previous quarters continued into the fourth quarter. In addition, the launch of innovative products, especially in the Dermatology and Digestive Health categories, contributed to the positive business performance.

Earnings

EBITDA before special items increased by 20.9% to €312 million in the fourth quarter of 2021 (Q4 2020: €258 million), with the margin rising 1.6 percentage points to 22.2%. The growth in earnings was primarily driven by our strong business performance. This was partially offset by investments associated with the launch of innovative products and by inflation-related increases in costs.

EBIT at Consumer Health came in at €201 million (Q4 2020: €352 million) after special charges of €25 million (Q4 2020: special gains of €174 million) that were mainly attributable to restructuring.

2.2.3 Value-Based Performance

A 2.2.3/1

Value-Based Performance

	Crop Science		Pharmaceuticals		Consumer Health		Group[2]	
€ million	2020	2021	2020	2021	2020	2021	2020	2021
EBIT[1]	(18,629)	(495)	3,467	4,469	992	808	(16,169)	3,353
Income taxes[3]	4,471	119	(832)	(1,073)	(238)	(194)	3,881	(805)
NOPAT[1]	(14,158)	(376)	2,635	3,396	754	614	(12,288)	2,548
Average capital employed[1]	49,502	40,161	16,550	18,275	9,802	9,581	74,675	66,449
ROCE[1]	–28.6%	–0.9%	15.9%	18.6%	7.7%	6.4%	–16.5%	3.8%
WACC[1, 4]	6.8%	6.2%	6.8%	6.2%	6.8%	6.2%	6.8%	6.2%

2020 figures restated; Animal Health recognized as a discontinued operation

[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 2021 amounted to 3.8%. ROCE improved considerably at the Group level compared with the previous year, which was marked by significant special charges within the Crop Science and Pharmaceuticals divisions, but remained 2.4 percentage points below the cost of capital (6.2%). At Crop Science, net operating profit after taxes (NOPAT) benefited from impairment loss reversals but was again adversely impacted by provisions for litigations. As such, ROCE remained below the cost of capital, despite a reduced capital base. At Pharmaceuticals, ROCE rose year on year due to a reduction in special charges, even though its capital base increased as a result of the acquisition of Vividion Therapeutics, Inc. Consumer Health recorded a decline in NOPAT and saw a further reduction 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, 2020	Dec. 31, 2021
Goodwill	36,418	40,106
Other intangible assets	25,424	26,258
Property, plant and equipment	11,723	12,688
Other financial assets[2]	143	57
Inventories	10,961	11,314
Trade accounts receivable	9,552	10,047
Other receivables[2]	1,843	1,896
Deferred tax assets[2]	2,378	2,444
Claims for income tax refunds	1,233	1,526
Assets held for sale	113	76
Gross capital employed	**99,788**	**106,412**
Other provisions[2]	(13,974)	(15,321)
Trade accounts payable	(5,678)	(6,792)
Other liabilities[2]	(2,938)	(3,406)
Refund liabilities	(4,463)	(4,847)
Contract liabilities	(4,314)	(4,821)
Financial liabilities[2]	(2)	–
Deferred tax liabilities[2]	(1,107)	(814)
Income tax liabilities	(2,537)	(2,288)
Liabilities directly related to assets held for sale	–	–
Capital employed[1]	**64,775**	**68,123**
Average capital employed[1]	**74,675**	**66,449**

2020 figures restated; Animal Health recognized as a discontinued operation
[1] For definition see A 2.3 "Alternative Performance Measures Used by the Bayer Group."
[2] Selected items forming part of the line item in the statement of financial position; items that were predominantly non-interest-bearing or nonoperating in nature were eliminated from capital employed.

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 1.2.2

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	A-2	stable
Moody's	Baa2	P-2	negative
Fitch Ratings	BBB+	F-2	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 2020	Q4 2021	2020	2021
Net cash provided by (used in) operating activities from continuing operations	**697**	**3,046**	**4,569**	**5,089**
Net cash provided by (used in) operating activities from discontinued operations	54	–	334	–
Net cash provided by (used in) operating activities (total)	**751**	**3,046**	**4,903**	**5,089**
Net cash provided by (used in) investing activities (total)	**(194)**	**(988)**	**(4,073)**	**855**
Net cash provided by (used in) financing activities (total)	**(1,354)**	**(1,798)**	**423**	**(5,645)**
Change in cash and cash equivalents due to business activities	**(797)**	**260**	**1,253**	**299**
Cash and cash equivalents at beginning of period	**5,067**	**4,316**	**3,185**	**4,191**
Change due to exchange rate movements and to changes in scope of consolidation	(79)	(12)	(247)	74
Cash and cash equivalents at end of period	**4,191**	**4,564**	**4,191**	**4,564**

Net cash provided by operating activities

The net operating cash flow from continuing operations in 2021 came to €5,089 million (2020: €4,569 million). This figure included net settlement payments of €4,259 million (2020: €3,938 million) to resolve litigations, mainly in connection with the glyphosate and Essure™ litigations.

Net cash provided by investing activities

Investing activities led to a net cash inflow of €855 million (2020: net cash outflow of €4,073 million). Cash outflows for property, plant and equipment and intangible assets rose to €2,611 million (2020: €2,418 million), with the increase mainly attributable to the Pharmaceuticals Division. Net cash outflows for divestments, less transferred cash, amounted to €6 million (2020: proceeds of €4,172 million) and pertained to the final purchase price adjustment from the divestment of the Animal Health business unit as well as small-scale divestments at the Crop Science Division. The high inflows in the prior year were mainly due to sale of the Animal Health business, which closed in the third quarter of 2020. Cash outflows for acquisitions, less acquired cash, amounted to €1,340 million (2020: €2,263 million) and mainly related to the acquisition of U.S. biopharmaceutical company Vividion Therapeutics, Inc. The prior-year figure included payments for the acquisition of Asklepios BioPharmaceutical Inc., United States, and KaNDy Therapeutics Ltd., United Kingdom, among other transactions. The net cash inflow from current financial assets came to €4,265 million (2020: outflow of €4,455 million). These inflows largely arose from the divestment of investments in money market funds and were used to make settlement payments and repay loans, among other things.

Net cash used in financing activities

There was a net cash outflow of €5,645 million for financing activities (2020: inflow of €423 million). This included net loan repayments of €2,452 million (2020: net borrowings of €4,467 million). Net interest payments decreased to €1,200 million (2020: €1,276 million). The Bayer Group paid a dividend of €1,993 million (2020: €2,768 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 €1,415 million in 2021 (2020: 1,343 million).

Capital expenditures

A 2.2.4/3

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

€ million	2020	2021
Crop Science	1,103	1,019
Pharmaceuticals	915	1,178
Consumer Health	159	196
Reconciliation	209	218
Group[2]	**2,418**	**2,611**

[1] Group total including continuing and discontinued operations

Crop Science continuously invests in a variety of projects within 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 2021 included investments in the sourcing of an important raw material used in the production of glyphosate in the United States (€60 million). We also invested in the expansion of fungicide production in Germany (€16 million). Alongside these projects, the development of digital solutions for our customers was a key investment in 2021 and will remain so in the coming years.

At **Pharmaceuticals**, the largest expenditures for property, plant, and equipment in 2021 were for cell and gene therapy research and production facilities in the United States, Spain, Germany, the United Kingdom and Canada (€131 million); modernization programs for the production network of our product supply organization at the sites in Turku, Finland; Leverkusen, Germany; and Garbagnate, Italy (€118 million); the development of a new production site for medicinal products in Costa Rica (€65 million); and the construction of a new production facility for solid launch products in Leverkusen, Germany (€60 million).

At approximately €21 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

		2020	2021
Crop Science	Expansion of fungicide production capacities in Dormagen, Germany	ongoing	ongoing
	Expansion of research and development facilities in Monheim, Germany	ongoing	ongoing
	Expansion of insecticide production capacities in Vapi, India	ongoing	completed
	Construction of a corn seed production site in Pochuyki, Ukraine	ongoing	completed
	Expansion of research and development facilities in Petrolina, Brazil	ongoing	ongoing
	IT solutions to support digital transformation	ongoing	ongoing
	Sourcing of a raw material used in the production of glyphosate in Soda Springs, United States	ongoing	ongoing
	Implementation of sustainability measures in Soda Springs, United States	ongoing	ongoing
	Construction of a production site in Russia		initiated
Pharmaceuticals	Expansion of Eylea™ production capacities in Berlin, Germany, and in Shiga, Japan	completed	
	Pilot facility for solids production in Leverkusen, Germany	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	completed	
	Construction of modular production center for biologicals in Berkeley, United States	ongoing	ongoing
	Construction of a sterile filling plant for launch products in Berlin, Germany	ongoing	ongoing
	Expansion of Xarelto™ production in Bitterfeld, Germany	completed	
	Expansion of active ingredient production for acarbose in Wuppertal, Germany	ongoing	ongoing
	Expansion of packaging capacities in Beijing, China	initiated	ongoing
	Construction of a new production facility for solid launch products in Leverkusen, Germany	initiated	ongoing
	Construction of a new multi-purpose facility for active ingredient production in Wuppertal, Germany		initiated
	Construction of research and production facilities for cell and gene therapies in the United States, Spain, German, Canada and the United Kingdom	initiated[1]	ongoing
	Construction of a new production site in Costa Rica	initiated[1]	ongoing
Consumer Health	Upgrade of global production site facilities to new GMP standards	ongoing	ongoing

[1] The project volume became material in 2021.

Liquid assets and net financial debt

A 2.2.4/5

Net Financial Debt[1]

€ million	Dec. 31, 2020	Dec. 31, 2021	Change (%)
Bonds and notes	36,745	37,593	+2.3
of which hybrid bonds[2]	4,532	4,537	+0.1
Liabilities to banks[3]	3,669	773	–78.9
Lease liabilities	1,143	1,165	+1.9
Liabilities from derivatives[4]	136	69	–49.3
Other financial liabilities	77	1,272	.
Receivables from derivatives[4]	(141)	(114)	–19.1
Financial debt	**41,629**	**40,758**	**–2.1**
Cash and cash equivalents	(4,191)	(4,564)	+8.9
Current financial assets[5]	(7,393)	(3,057)	–58.7
Net financial debt[1]	**30,045**	**33,137**	**+10.3**

2020 figures restated

[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 as well as financial investments in debt and equity instruments that were recorded as current on first-time recognition

The Bayer Group's net financial debt increased by €3.1 billion to €33.1 billion in 2021. Cash inflows from operating activities stood against outflows for dividends and the acquisition of U.S. biopharmaceutical company Vividion Therapeutics, Inc., as well as for settlement payments for the litigations in the United States and negative currency effects.

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

In January 2021, Bayer AG placed bonds with a total volume of €4 billion. The four tranches with volumes of between €0.8 and €1.2 billion have maturities of 4 years, 8 years, 10.5 years and 15 years. The coupons on the notes are 0.05%, 0.375%, 0.625% and 1.00% p.a., respectively.

In addition, five bonds with a total volume of US$4.5 billion, one bond with a nominal volume of €750 million and one bond with a nominal volume of JPY10 billion were redeemed at maturity in 2021.

The decrease in liabilities to banks mainly resulted from the repayment of 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.

The other financial liabilities as of December 31, 2021, included €1.2 billion in commercial paper.

The decline in current financial assets mainly related to 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, 2020	Dec. 31, 2021	Change (%)
Noncurrent assets	**81,129**	**87,663**	**+8.1**
Assets held for sale	113	76	–32.7
Other current assets	35,562	32,502	–8.6
Current assets	**35,675**	**32,578**	**–8.7**
Total assets	**116,804**	**120,241**	**+2.9**
Equity	**30,675**	**33,168**	**+8.1**
Noncurrent liabilities	**49,361**	**57,670**	**+16.8**
Current liabilities	36,768	29,403	–20.0
Liabilities directly related to assets held for sale	–	–	–
Total current liabilities	**36,768**	**29,403**	**–20.0**
Liabilities	**86,129**	**87,073**	**+1.1**
Total equity and liabilities	**116,804**	**120,241**	**+2.9**

2020 figures restated

Between December 31, 2020, and December 31, 2021, total assets increased by €3.4 billion to €120.2 billion.

// Noncurrent assets increased by €6.5 billion to €87.7 billion. This increase was mainly attributable to the foreign currency measurement of goodwill, which is primarily in the United States. Other contributing factors were the acquisition of Vividion Therapeutics, Inc., United States, and impairment loss reversals on other intangible assets. By contrast, the adjustment of the purchase price allocation for Asklepios BioPharmaceutical, Inc. (AskBio), United States, had a negative effect.
// Total current assets fell by €3.1 billion to €32.6 billion. This decrease was mainly due to a decline in investments in money market funds and bank deposits, which were used to make settlement payments and repay debt.

// Equity rose by €2.5 billion during the year to €33.2 billion. This was primarily attributable to the positive income after income taxes, changes – recognized outside profit or loss – arising from the remeasurement of the net defined benefit liability, and from currency translation of equity items. By contrast, the dividend payment had a negative effect. The equity ratio rose to 27.6% (2020: 26.3%).
// Liabilities rose by €0.9 billion as of December 31, 2021, to €87.1 billion. A key factor here was the significant year-on-year increase in allocations to provisions for variable compensation under the Group-wide short-term incentive (STI) program and similar programs. Additional allocations to provisions were made in connection with restructuring. By contrast, liabilities were diminished by the repayment of bonds and the syndicated credit facility as well as the reduction in provisions for pensions due to an increase in the discount rate and the positive development of plan assets.

2.3 Alternative Performance Measures Used by the Bayer Group

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:

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

// 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 (earnings before interest, tax, depreciation and amortization) encompasses earnings before the financial result, 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] 2021	Growth forecast[1] 2022
World	+5.6%	+4.2%
European Union	+5.2%	+3.7%
of which Germany	+2.7%	+3.8%
United States	+5.7%	+4.1%
Emerging Markets[2]	+6.6%	+4.8%

[1] Real growth of gross domestic product; Source: IHS Markit
[2] Including about 50 countries defined by IHS Markit as Emerging Markets in line with the World Bank
As of January 2022

Global economic recovery set to slow going forward

The global economic recovery from the pandemic-induced slump is set to continue in 2022, though at a slower pace. We expect the Omicron variant's spread around the world to have a dampening impact on economic activity in almost all regions. At the same time, we anticipate that transport bottlenecks and supply-chain problems will continue to lead to delivery delays and rising prices. Labor shortages in some countries, such as in the United States, are also a factor. However, the COVID-19 pandemic's negative impact could dissipate in coming months, thereby alleviating international supply-chain problems and enabling the economy to rebound during the year.

Economic forecasts still entail a high degree of uncertainty – particularly due to the considerable impact of the pandemic on economic activity.

A 3.1.1/2

Economic Outlook for the Divisions

	Growth 2021	Growth forecast 2022
Seeds and crop protection market[1]	+7%	+5%
Pharmaceuticals market[2]	+6%	+5%
Consumer health market[3]	+4%	+4%

2021 data provisional
[1] Bayer's estimate (as of January 2022), plus various local sources; currency-adjusted
[2] Source: IQVIA Market Prognosis (as of September 2021); all rights reserved; currency-adjusted
[3] Bayer's estimate (as of November 2021), taking into account external sources; currency-adjusted

We foresee continued strong market growth for the global **seed and crop protection market** in 2022 (+5%). We expect a major growth contribution from price as seed prices will be higher, reflecting the elevated crop commodity price environment. Agrochemical prices are expected to be significantly higher, reflecting continued inflationary cost pressures in 2022. Latin American corn and soybean acreage will continue to expand.

We expect the **pharmaceuticals market** to expand by 5% in 2022 (2021: 6%). Innovative products will continue to drive growth and more than offset losses due to the expiration of patents.

At around 4%, we anticipate that growth of the **consumer health market** in 2022 will be near the 2021 level (4%). We expect social distancing and economic conditions to 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. To enhance the comparability of operational performance, we are presenting this guidance on a currency-adjusted basis, applying the average monthly exchange rates from 2021.

In 2022, we expect to generate currency-adjusted sales of approximately €46 billion, which corresponds to an increase of about 5% on a currency- and portfolio-adjusted basis. We expect the EBITDA margin before special items to come in at around 26% on a currency-adjusted basis. Based on the currency-adjusted sales forecast, this would correspond to EBITDA before special items of around €12 billion on a currency-adjusted basis. We expect to post core earnings per share of approximately €7.00 on a currency-adjusted basis.

Based on the exchange rates as of December 31, 2021, we expect to generate sales of approximately €47 billion in 2022, which corresponds to an increase of about 5% 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 around €12 billion. We expect core earnings per share to come in at approximately €7.10. Overall, it should be noted that 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 €110 million on an annual basis.

A 3.1.2/1

Forecast for 2022

	2021 figures		2022 forecast (Fx adj.)		2022 forecast at closing rates on Dec. 31, 2021	
	€ billion	Fx & p adj. change (%)	€ billion	Fx & p adj. change (%)	€ billion	Fx & p adj. change (%)
Sales	**44.1**	**+8.9**	**~46**	**~+5**	**~47**	**~+5**
Crop Science	20.2	+11.1	-	~+7		~+7
Pharmaceuticals	18.3	+7.4	-	~+3 to 4		~+3 to 4
Consumer Health	5.3	+6.5	-	~+4 to 5		~+4 to 5
		Margin (%)		**Margin (%)**		**Margin (%)**
EBITDA before special items[1]	**11.2**	**25.4**	**-**	**~26**		**~26**
Crop Science	4.7	23.2	-	~25 to 26		~25 to 26
Pharmaceuticals	5.8	31.5	-	~32		~32
Consumer Health	1.2	22.5	-	~22 to 23		~22 to 23
Financial result (core)[2]	**–1.2**		**~–1.5**		**~–1.5**	
Tax rate (core)[3]	**24.2%**		**~23%**		**~23%**	
Free cash flow[1]	**1.4**		**~2.0 to 2.5**		**~2.0 to 2.5**	
Net financial debt[1]	**33.1**		**~33 to 34**		**~33 to 34**	
Special items in EBIT	–3.9		~–1.0		~–1.0	
	€		€		€	
Core EPS[1]	**6.51**		**~7.00**		**~7.10**	

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 €1.0 billion (currency-adjusted) in 2022 in connection with restructuring 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. We regard opportunities as positive deviations, and risks as negative deviations, from projected or target values for potential future developments. We also take into account risks that could occur as a result of our business operations, such as those impacting social and environmental matters.

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, we identify and leverage opportunities as part of our regular business operations and through our 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

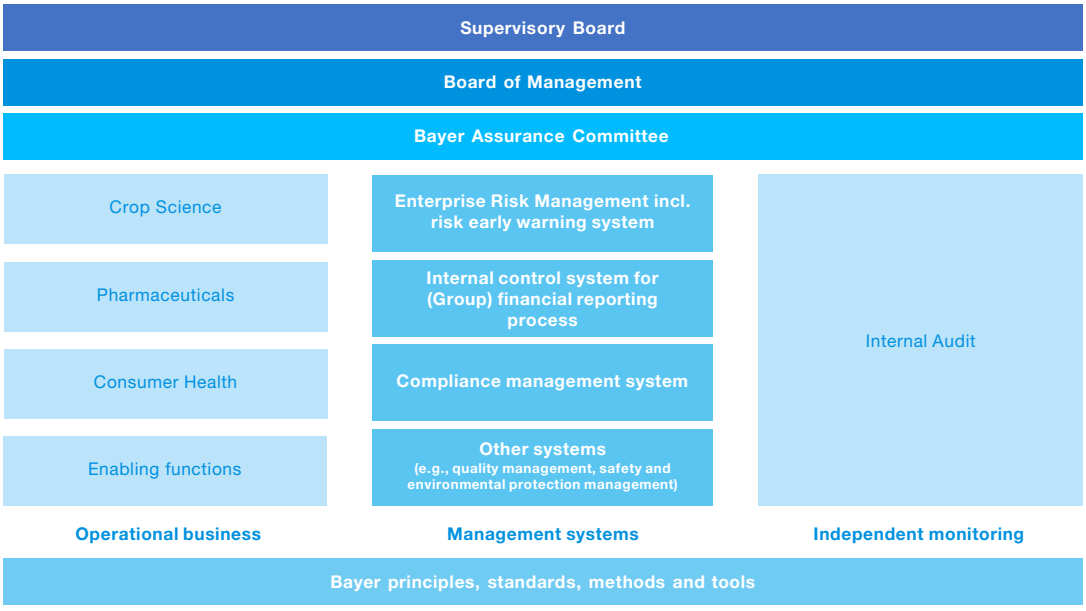
We have implemented a holistic and integrated risk management system designed to ensure the continued existence and future target attainment of the Group through the early identification, assessment and treatment of risks.

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 subsequently provides a report 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.

Management systems
Controls and monitoring are performed as part of the respective management systems, focusing on the risks that need to be mitigated. The overarching requirements for all management systems in place at Bayer are defined by the integrated management system (IMS). 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, along with other cross-divisional management systems, lies with different enabling functions.

The Enterprise Risk Management department 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 over financial reporting (ICSOFR) 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 ICSOFR is to ensure proper and effective accounting and (Group) financial reporting in accordance with the relevant reporting principles. The ICSOFR 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. 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 ICSOFR and the relevant criteria for the 2021 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.

Independent monitoring
The Internal Audit department 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.

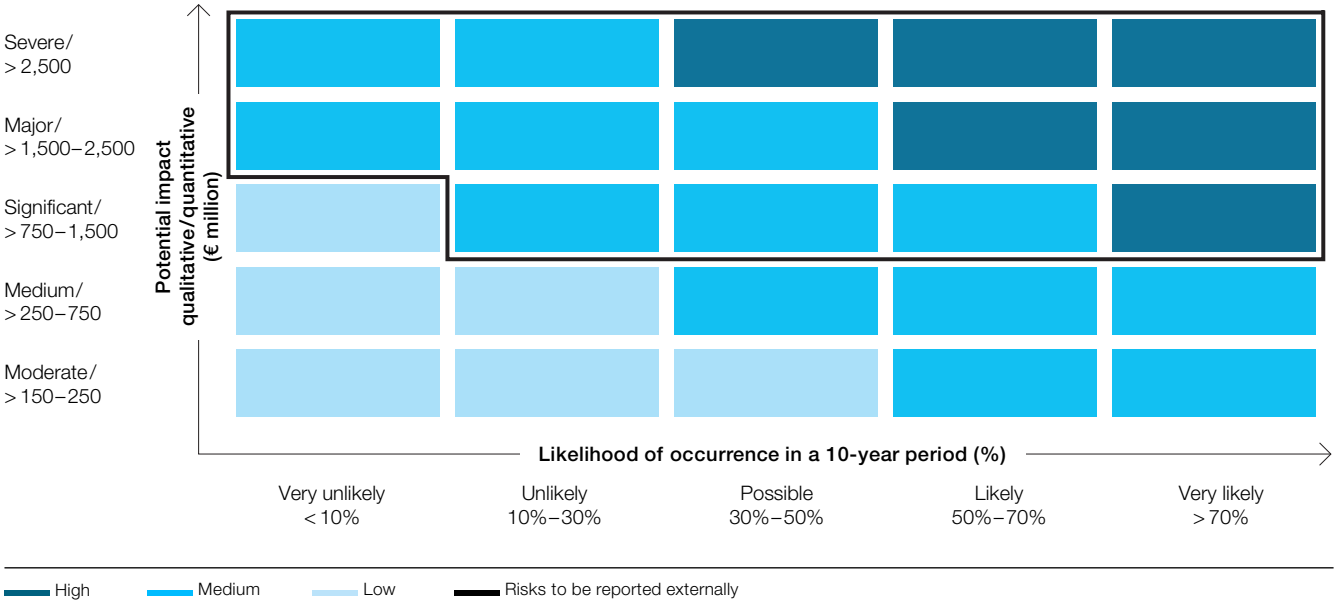
Risk management process

Identification: Risks are identified by risk owners in the divisions and enabling functions. To help ensure we identify risks as comprehensively as possible, we maintain a risk universe that reflects the company's potential risk categories. The Bayer Risk Universe, which is regularly updated, also 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 Corporate Social Responsibility (CSR) Directive Implementation Act that relate to environmental, employee and social issues, human rights, corruption and bribery (compliance) are included as well. Detailed information on the nonfinancial statement pursuant to the CSR Directive Implementation Act can be found in the "About this Report" section.

Assessment: Where possible, the identified risks are evaluated with regard to their potential impact and likelihood of occurrence using the following matrix. Risks are assessed on a net basis, taking into account the risk control measures in place to mitigate the potential impact and/or likelihood of occurrence.

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.

As an additional step in the process, 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.

We aggregate risks to ensure the early detection of risks that could combine to potentially endanger our company's continued existence. Using methods such as Monte Carlo simulations, we estimate the potential aggregated impact that our main risks could have on our cash flow. We compare the resulting aggregated risk situation with the risk-bearing capacity approved by the Board of Management. The outcome of this comparison is factored into the Board of Management's overall assessment of the company's risk status.

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. 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 rating matrix 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 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 and PCB matters, 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.

See also Note [30] to B Consolidated Financial Statements

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 2021.

The section below details the individual risk categories that fall within the "Risks to be reported externally" area outlined in the risk matrix, as well as how they have been classified[14] 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 2021 was likewise 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, supply chain disruptions and the inability to procure certain materials, an increase in input prices, or longer development times. Our profitability, 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)

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 by tapping new customer segments, sales platforms 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 healthcare 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.

[14] The classification pertains to the risks.

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. Forecasts concerning climate change indicate that these risks may possibly increase in the long term. 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.

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. In addition, increasing digitalization in the agriculture sector could lead to the rise of new players and alter the market. 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.

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: Group; Medium: Crop Science, Pharmaceuticals)
Our business activity is subject to extensive regulations that are changing – and may become more stringent, including for reasons of a political nature. For example, further restrictions could be imposed on the sale and use of various crop protection products. In addition, approvals that have already been granted have already been and will probably continue to be challenged in court, especially by NGOs, potentially resulting in temporary or permanent revocation of product registrations or approvals and financial loss from reduced sales of crop protection products as well as associated seed offerings. The issue of conserving biodiversity plays a role in this connection, as does the manufacture and use of certain chemical substances. 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. We pursue a global strategy that bundles our strong product portfolio and our sustainability commitments, and leverages our global business presence. We also 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, and by appropriately participating to defend against challenges to product approvals.

Business strategy (Medium: 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. Throughout our company, we need to ensure that the digital transformation we are targeting is accompanied by the corresponding IT support. 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 have established a cell and gene therapy unit, for example.

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 capabilities. In the Pharmaceuticals Division, opportunities result from digitalization and associated new research and development methods that save time and increase development effectiveness. In addition, new, unique screening technologies facilitate the identification of new lead structures to unlock previously undruggable targets, with the potential to develop new and innovative products. We also rely on networking, both within the company and with external partners, to boost our innovation capabilities. This stimulates the development of new products.

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 our 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, result in personal injury and damage to our reputation, lead to declines in sales and/or margins, and 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. The substances we procure, and the companies that manufacture them, must meet all necessary regulatory requirements. These substances must also be suitable for fulfilling regulatory requirements further down the value chain. 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)

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. Developments such as the growing relevance of disruptive technologies, the pandemic situation and new ways of working will require our employees to possess new, innovative skillsets. It is also possible that organizational changes may reduce employee engagement or increase staff turnover if they are not implemented transparently or do not fully deliver the anticipated benefits. 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. System reliability and the confidentiality of internal and external data are matters of fundamental importance to our company. If our governance fails to address this challenging environment in an optimal manner, our operational stability could impact our business and our information security requirements may not be met adequately. 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

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 in accordance with 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. 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, 2021, by €26 million (December 31, 2020: €16 million). Derivatives used to hedge anticipated currency exposure that are designated for hedge accounting would have improved or diminished equity (other comprehensive income) by €443 million (December 31, 2020: €319 million). Currency effects on anticipated exposure are not taken into account. Of the amount impacting equity, €132 million is related to the Chinese renminbi (CNY), €109 million to the Brazilian real (BRL), €47 million to the Japanese yen (JPY) and €37 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 2021 gave the following result: A hypothetical increase of one percentage point in these interest rates (assuming constant currency exchange rates) as of January 1, 2021, would have raised our interest expense for the year ended December 31, 2021, by €14 million (December 31, 2020: €58 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 hypothetical 10% change in commodity prices for derivatives used for hedging purposes indicated an effect of €37 million on equity (December 31, 2020: €27 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.

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 requirements concerning ethics, compliance – including the observance of human rights – and sustainability. 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. 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.

Health, safety and environment (Medium: Group)

We attach great importance not only to product safety but also to protecting our employees and the environment, as well as to respecting human rights both within our own business operations and also in our business relationships along the value chain. Misconduct or noncompliance with legal requirements or Bayer Group standards 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 patent 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[15])

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, for example. 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

A large number of lawsuits from plaintiffs claiming to have been exposed to glyphosate-based products manufactured by Bayer's subsidiary Monsanto have 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 a multidistrict litigation (MDL) in the Northern District of California for common pre-trial management.

[15] See also Note [30] 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.

In 2020, Monsanto reached an agreement in principle with plaintiffs, without admission of liability, to settle most of the current Roundup™ litigation and to put in place a mechanism to resolve potential future claims. As of February 1, 2022, Monsanto had reached settlements and/or was close to settling in a substantial number of claims. As we now have greater visibility regarding the number and quality of claims made, we consider that, of the approximately 138,000 claims in total which have been brought, approximately 107,000 have been settled or are not eligible for various reasons.

The three adverse verdicts – Johnson, Hardeman and Pilliod – are not covered by the settlement. In August 2021, the California Court of Appeal ruled against Monsanto in the Pilliod appeal. In November 2021, the California Supreme Court denied review of the appeal. The Company is considering its options with respect to seeking review by the Supreme Court of the United States. The Johnson case was concluded with payment of the US$20.5 million final judgment plus interest in March 2021. In May 2021, the United States Court of Appeals for the 9th Circuit ruled against Monsanto in the Hardeman appeal. The company has petitioned the U.S. Supreme Court for review in Hardeman. In December 2021 the Supreme Court invited the U.S. Solicitor General to file a brief in the matter stating the government's views. In light of the Supreme Court's solicitation of views from the government, Bayer will not entertain any further settlement discussions with plaintiff lawyers at this point in time.

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.

In October 2021, the jury in another trial, Clark, issued a verdict in Monsanto's favor. The jury determined that Roundup™ did not cause the plaintiff's child's lymphoma. The Clark trial took place in the Superior Court of the State of California for the County of Los Angeles.

In December 2021, the jury in another trial, Stephens, issued a verdict in Monsanto's favor. The jury determined that Roundup™ did not cause the plaintiff's lymphoma. The Stephens trial took place in the Superior Court of the State of California for the County of San Bernardino.

The mechanism to resolve potential future claims involved a class settlement agreement between Monsanto and plaintiffs' counsel. In May 2021, this agreement failed to obtain approval by Judge Chhabria of the U.S. District Court for the Northern District of California. Following the judge's denial, in May 2021 Bayer announced a series of measures to resolve potential future glyphosate litigation, combining both legal and commercial actions. In July 2021, Bayer provided an update on the progress made and announced additional details. Bayer has developed two scenarios based on a potential ruling by the Supreme Court of the United States in the Hardeman case. If the Supreme Court accepts the petition filed by Bayer in August 2021 for review and rules in favor of Bayer, it would effectively end potential future litigation. The second scenario assumes that the Supreme Court either refuses to hear the Hardeman case or issues a ruling in favor of the plaintiff, in which case Bayer would activate its own claims administration program. Bayer has implemented corresponding accounting measures for this scenario, resulting in a discounted allocation to provisions for litigations of €3.5 billion in the second quarter of 2021 on top of the existing provisions. As of December 31, 2021, Bayer had a provision of US$7.5 billion for the aforementioned settlements to resolve existing and future glyphosate claims.

Bayer is confident that this provides an effective path to manage and address any risks from potential future Roundup™ litigation, while simultaneously giving Bayer more control going forward. Bayer continues to believe there is no reason for safety concerns in connection with these products.

As of February 1, 2022, a total of 28 Canadian lawsuits relating to Roundup™ had been served upon Bayer, including 11 seeking class action certification.

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.

We counter these risks, which could give rise to liability claims and also harm our reputation, by taking 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.

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. We also have a security organization in place that operates globally. 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.

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

No risks that could endanger the company's existence

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 potential threat to our continued existence, including when comparing our risk-bearing capacity with our aggregated risk situation. We see our risk status as stable compared with the previous year. 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.

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 D Governance Bodies

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 2021, 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 2021 concerning the German Corporate Governance Code is published on the Bayer website along with previous declarations: www.bayer.com/en/corporate-governance.aspx

Availability of compensation report and information on compensation system and compensation resolution

The Compensation Report for 2021, Independent Auditor's Report, information on our compensation system and the most recent resolution on compensation are publicly accessible at www.bayer.com/cpr.

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.

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.

See also A 1.1

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

In 2021, the Board of Management of Bayer AG initially comprised five members, with a sixth member being added on February 1, 2021. 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 D 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. Pursuant to Section 76, Paragraph 3a of the German Stock Corporation Act (AktG), the Board of Management must include at least one woman and at least one man if it consists of three or more members.

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 or its committees. 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 an HR consulting firm.

Liam Condon stepped down from the Board of Management on December 31, 2021, and was succeeded by Rodrigo Santos, who was appointed to the Board of Management effective January 1, 2022. Santos also assumed the role of head of the Crop Science Division.

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 50 to 59 years as of December 31, 2021. Three of the six members of the Board of Management serving as of December 31, 2021, 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. The legal requirement that the Board of Management must include at least one woman and at least one man has been fulfilled.

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

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.

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.

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

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. The Supervisory Board endeavors to ensure that the terms of service of its members are evenly spread, whereby no more than 20% of stockholder representatives shall serve on the Supervisory Board for longer than 12 years.

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 40 to 67 years as of December 31, 2021. 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, Dr. Fei-Fei Li, Colleen A. Goggins, Alberto Weisser, 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. Six 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:

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Expertise and Experience of Shareholder Representatives on the Supervisory Board

	International business experience	R&D	Agriculture/ food	Healthcare	Finance	Controlling/ risk management	HR	Governance/ compliance	Digital	Sustainability
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
Colleen A. Goggins	X			X			X			
Dr. Fei-Fei Li	X	X		X					X	
Alberto Weisser	X		X		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. This committee was dissolved by the Supervisory Board effective December 31, 2021. The Supervisory Board formed an ESG Committee effective January 1, 2022.

See the Report of the Supervisory Board for information on the committees' responsibilities; see D – Further Information for the members and chairpersons of the committees

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 2021, the Supervisory Board conducted a self-assessment with the support of an external consultant that yielded very good results on the whole. The potential improvements identified by this self-assessment are being systematically implemented by the Supervisory Board.

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, 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 2021 were duly published and can be viewed on the company's website.

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

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 applicable 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 that they could have prevented. Compliant and lawful conduct also factors 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 globally accessible compliance hotline that is operated by an independent service provider. Reports can be submitted either online or by telephone, with calls answered by trained, independent handlers. Those submitting reports can do so in their preferred language. The hotline is also accessible to the general public.

In 2021, the compliance organization received a total of 299 compliance reports in this way.

In addition, a so-called "speak-up inbox" was introduced at Bayer in 2020 for the submission of suspected compliance violations. Alternatively, suspected violations may also be reported to the respective compliance functions or to Internal Audit. Since 2021, it has also been possible to report suspected compliance violations by logging a so-called incident request on a newly implemented platform.

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 2021, around 95% of Bayer's managerial employees worldwide completed at least one compliance training program. Overall, around 90% of employees took part in the global web-based training program on data protection that was launched in the first quarter of 2021.

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.

We have 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, we comply with the IFPMA Code of Practice as the minimum global standard, along with the regulations set out in the applicable 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.

https://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 2021. 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 – 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. Furthermore, Bayer made political donations at state level in the United States in 2021. Under a new donation policy that came into effect at the start of 2022, Bayer will no longer make any political donations as a company worldwide.

In addition, we launched the Bayer Societal Engagement (BASE) principles in 2019. Afforded the status of a corporate policy, these principles serve to codify our 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 289 b through e and 315 b 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
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Employee-related aspects	A 1.2.2	Sustainability Management
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	A 1.5	Procurement and Supplier Management
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Social aspects	A 1.2.2	Sustainability Management
	A 1.6	Product Stewardship
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	A 1.5	Procurement and Supplier Management
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	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 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, 2021, 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 2021 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. 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. Pursuant to Section 84, Paragraph 3 of the German Stock Corporation Act, the Supervisory Board must grant a Board of Management member's request to revoke their appointment to the Board of Management in certain cases, and must also guarantee that member's reappointment after certain periods. Since Bayer AG falls within the scope of the German Codetermination Act, Section 31 of that act governs the voting majority required for the appointment or dismissal of members of the Board of Management as well as the voting procedure within the Supervisory Board. 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. As a publicly listed company that is subject to the German Codetermination Act, Bayer AG must ensure under Section 76, Paragraph 3a of the German Stock Corporation Act that its Board of Management includes at least one man and one woman if the number of members is greater than three.

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 was 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"). The Monsanto credit facility was drawn in 2018 to finance the acquisition of Monsanto. The resulting loan was repaid in full in January 2021. The reduction of the Monsanto credit facility and of the loan in the preceding years was achieved partly through 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. Holders of these bonds have the right to demand the redemption of bonds by Bayer AG in the event of a change of control if Bayer AG's credit rating were to deteriorate within 120 days after such change of control becomes effective, 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. As of December 31, 2021, the original US$15 billion bond had an outstanding amount of US$12.5 billion, while the full amount of the €5 billion bond was outstanding.

The terms of the €0.6 billion in outstanding notes (as of December 31, 2021) issued by Bayer in the years 2014 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$1.8 billion as of December 31, 2021; the nominal €6 billion in bonds issued by Bayer AG in 2020, the full amount of which was outstanding as of December 31, 2021; and the nominal €4 billion in bonds issued by Bayer AG in January 2021, the full amount of which was also outstanding as of December 31, 2021.

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, or 200% of annual cash compensation if they were appointed prior to 2010. The payment is limited in either case to the compensation for the remaining term of the respective contract, capped at twice the annual compensation.

5. Information on Bayer AG

Bayer AG has both holding and parent company functions in the Bayer Group.

Business lease agreements exist between Bayer AG on the one hand, and Bayer CropScience AG and Bayer Pharma AG – the former parent companies of the divisions Crop Science and Pharmaceuticals – 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 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.

Following the merger of Bayer Business Services GmbH into Bayer AG in 2020, a global service hub was implemented within the Bayer AG enabling functions in 2021. The main task of this global service hub involves the central coordination of administrative activities and the charging-on of said activities within the Bayer Group on a cost source basis.

In the second half of 2021, the Crop Science Division transferred the sale of active ingredients and finished goods in Brazil to Bayer CropScience Deutschland GmbH (BCSD GmbH). In this context, the Crop Science Division continues to operate as a producer of crop protection products for the Brazilian market. Sales of these products are now handled through BCSD GmbH, which, in turn, is a member of a consortium that has assumed the task of selling these products in Brazil. Bayer AG and BCSD GmbH entered into a license agreement governing the consortium's use of Bayer AG's intellectual property. Bayer AG participates in the substantial sales and earnings growth of BCSD GmbH through existing profit and loss transfer agreements.

The presentation of the income statement was converted to the total cost (nature of expense) method in 2021. The prior-year figures were restated accordingly.

5.1 Earnings Performance of Bayer AG

A 5.1/1

Bayer AG Summary Income Statements According to the German Commercial Code

€ million	2020	2021
Net sales	14,543	15,497
Increase or decrease in inventories of finished goods and work in process	96	109
Other own work capitalized	6	7
Other operating income	4,367	3,207
Cost of materials	(10,014)	(10,224)
Personnel expenses	(2,564)	(3,003)
Write-downs on intangible assets and property, plant and equipment	(96)	(108)
Other operating expenses	(8,385)	(6,923)
Operating income	**(2,047)**	**(1,438)**
Income from investments in affiliated companies – net	(206)	5,660
Interest income/expense – net	43	88
Other financial income/expense – net	252	81
Nonoperating income	**89**	**5,829**
Income taxes and other taxes	(589)	(281)
Income after taxes/net income	**(2,547)**	**4,110**
Profit carried forward	–	–
Allocation to/from other retained earnings	4,512	(2,055)
Distributable profit	**1,965**	**2,055**

Development of earnings

Sales in 2021 came in slightly above the €15 billion forecast, reflecting the anticipated recovery from the COVID-19 pandemic. A large part of the Pharmaceuticals Division's product range particularly benefited from this recovery, with the top-selling product Xarelto™, the radiology business and Adalat™ all posting substantial gains. Crop Science successfully compensated for the mid-year transfer of the Brazilian business. Furthermore, sales from the internal charging-on of costs for services, which was taken over from Bayer Business Services GmbH, slightly beat expectations. As expenses for the current restructuring programs diminished earnings less than expected, the operating loss was around €1.4 billion, and thus €0.6 billion narrower than forecast.

Sales of Bayer AG increased by about 7% to €15,497 million in 2021 (2020: €14,543 million).

The Crop Science Division's sales increased to €4,636 million (2020: €4,471 million) due to the positive business performance, which was driven by favorable weather conditions and higher prices for crop protection products. Intra-Group sales were practically unchanged year on year at €4,366 million (2020: €4,326 million). External sales rose to €270 million (2020: €145 million), mainly due to higher sales at the Fungicides business unit. Among the business units, Fungicides and Herbicides saw sales rise to €1,848 million (2020: €1,701 million) and €1,255 million (2020: €1,180 million), respectively, while sales at Insecticides fell to €813 million (2020: €880 million). With regard to the regions, sales in Europe/Middle East/Africa edged higher to €1,703 million (2020: €1,499 million). In North America, sales were on par with the previous year at €1,110 million (2020: €1,111 million). Sales rose to €1,068 million (2020: €904 million) in the Asia/Pacific region, but declined slightly to €755 million (2020: €957 million) in Latin America due to the transfer of the Brazilian business.

The Pharmaceuticals Division posted an increase in sales to €9,866 million (2020: €9,479 million). The increase in sales of Xarelto™ to €3,799 million (2020: €3,643 million) and of Adempas™ to €551 million (2020: €356 million) was largely attributable to higher demand. Intra-Group sales rose to €8,992 million (2020: €8,630 million), and external sales increased to €874 million (2020: €849 million). In the Europe/Middle East/Africa region, sales of the Pharmaceuticals Division advanced to €4,500 million (2020: €4,460 million), mainly due to higher demand for Xarelto™ in Russia. The sales increase in North America to €2,123 million (2020: €2,014 million) was largely the result of volume effects for Adempas™. Sales in Asia/Pacific rose to €2,688 million (2020: €2,528 million), primarily due to the expansion of business with Adalat™ and the YAZ™ product family in China. Sales in Latin America increased to €555 million (2020: €477 million), largely thanks to higher Xarelto™ sales due to rising demand in Mexico and Brazil.

The Enabling Functions saw a substantial rise in sales to €995 million (2020: €593 million), primarily as a result of higher revenue in connection with the new global service hub business model.

Other operating income decreased to €3,207 million (2020: €4,367 million), largely due to exchange gains falling by €1,489 million to €2,535 million. Income from the reversal of unutilized provisions, which mainly pertained to restructuring measures, increased by €406 million to €530 million and partially offset the decrease. The cost of materials increased by around 2% year on year to €10,224 million (2020: €10,014 million). Personnel expenses climbed to €3,003 million (2020: €2,564 million), mainly due to higher expenses for bonuses and other variable compensation components for employees.

Other operating expenses decreased to €6,923 million (2020: €8,385 million). The year-on-year change resulted from a €1,322 million decline in expenses from foreign currency translation (2020: €3,893 million), a €378 million decrease in severance payments (2020: €669 million), a €36 million reduction in leasing and rental expenses (2020: €379 million), and a €142 million decline in expenses for logistics and information (2020: €725 million). By contrast, there was a €99 million increase in marketing and selling expenses (2020: €322 million), and a €76 million rise in research expenses (2020: €1,142 million).

Research and development expenses, consisting of related personnel and nonpersonnel costs recorded within the respective expense item, amounted to €2,431 million (2020: €2,401 million). Of these expenditures, the Crop Science Division accounted for €491 million (2020: €621 million) and the Pharmaceuticals Division for €1,940 million (2020: €1,780 million). The decline at Crop Science mainly resulted from lower expenses for restructuring measures, while the increase at Pharmaceuticals was largely attributable to restructuring measures. As of December 31, 2021, around 4,800 people were employed full time in research and development. Research and development expenses corresponded to a 16% (2020: 17%) share of sales.

The company recorded an operating loss of €1,438 million for 2021 (2020: €2,047 million).

The balance of income and expenses from investments in affiliated companies was €5,660 million (2020: minus €206 million), and thus up €5,866 million year on year. Dividends and similar income from subsidiaries fell to €204 million (2020: €500 million). However, this decline was more than offset by a significant increase in the balance of income and expenses from profit and loss transfer agreements with subsidiaries, which rose by €7,145 million to €2,004 million (2020: minus €5,141 million). The decline in dividends and similar income from subsidiaries resulted mainly from the absence of dividend payments from Bayer Animal Health GmbH (2020: €265 million) and a €70 million decline in dividends and similar income from Bayer (China) Ltd., to €124 million. The balance of income and expenses from profit and loss transfer agreements with subsidiaries was impacted particularly by the income of €1,937 million transferred by Bayer Pharma AG (2020: loss of €731 million) that was driven by high impairment loss reversals. While a loss of €4,500 million at Bayer CropScience AG was compensated in 2020 based on an existing control agreement, that company turned a profit in 2021, although it was not transferred to Bayer AG. The balance of other income and expenses from profit and loss transfer agreements from investments in affiliated companies declined to €3,452 million (2020: €4,435 million). These items included gains from the sale of investments in affiliated companies together with write-downs thereof. While the divestment of Bayer Animal Health GmbH accounted for €4,132 million in the previous year, 2021 saw gains of €3,509 million from the sale of investments in affiliated companies due to a change in the shareholding structure. Specifically, a gain of €1,135 million resulted from the placement of the shares of Bayer NV, Belgium, into Zweite K-W-A Beteiligungsgesellschaft mbH, and of €2,374 million from the placement of the shares of Zweite K-W-A Beteiligungsgesellschaft mbH into Neunte Bayer VV GmbH, in return for the granting of new shares in both cases. In 2021, there were write-downs of €89 million (2020: €12 million) for Bayer Türk Kimya Sanayii Limited Sirketi, Turkey, and of €16 million for Bayer Capital Corporation B. V., Netherlands.

Net interest income increased to €88 million in 2021 (2020: €43 million), mainly due to the €133 million decline in interest expense to subsidiaries to €56 million (2020: €189 million). Income from loans to Group companies fell by €63 million to €543 million (2020: €606 million), while interest expense from bonds rose by €34 million to €209 million (2020: €175 million). The balance of interest income from plan assets of Bayer Pension Trust e. V. (€381 million; 2020: €320 million) and interest expense from the unwinding of the discount on pension provisions (€579 million, 2020: €508 million) also declined slightly, falling by €10 million to minus €198 million (2020: minus €188 million).

The balance of other financial expenses and other financial income was positive, at €81 million (2020: €252 million). The decline was primarily due to the absence of effects from the prior year amounting to expense of minus €115 million. Other factors were lower proceeds from the divestment of shares in Covestro AG (€22 million, 2020: €45 million) and higher expenses for personnel-related provisions recognized in nonoperating income (€70 million, 2020: €47 million).

In 2021, the company generated income of €4,391 million before income taxes (2020: €1,958 million loss before income taxes). After deduction of €281 million (2020: €589 million) in taxes, net income for the year was €4,110 million (2020: net loss of €2,547 million). After the allocation of €2,055 million to other retained earnings, the distributable profit amounted to €2,055 million. The Board of Management will propose to the Annual Stockholders' Meeting on April 29, 2022, that, of the distributable profit of €2,055,045,684.07 reported in the annual financial statements for the fiscal year 2021, an amount of €1,964,848,164.00 be used to pay a dividend of €2.00 per share carrying dividend rights and the remaining amount of €90,197,520.07 be allocated to other retained earnings.

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, 2020	Dec. 31, 2021
ASSETS		
Noncurrent assets		
Intangible assets, property, plant and equipment	413	436
Financial assets	66,370	72,038
	66,783	72,474
Current assets and miscellaneous assets		
Inventories	2,396	2,579
Trade accounts receivable	1,855	2,057
Receivables from subsidiaries	4,633	2,001
Other assets and deferred charges	2,061	1,210
Cash and cash equivalents, marketable securities	5,561	3,774
	16,506	11,621
Total assets	**83,289**	**84,095**
EQUITY AND LIABILITIES		
Equity	**28,305**	**30,450**
Provisions	**4,790**	**5,051**
Other liabilities and deferrals and accruals		
Bonds and notes, liabilities to banks	14,548	14,883
Trade accounts payable	2,022	2,025
Payables to subsidiaries	33,098	29,900
Remaining liabilities and deferred income	526	1,786
	50,194	48,594
Total equity and liabilities	**83,289**	**84,095**

Development of items in the statement of financial position

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 increased to €84,095 million in 2021 (2020: €83,289 million).

Whereas noncurrent assets increased to €72,474 million (2020: €66,783 million), current and miscellaneous assets declined to €11,621 million (2020: €16,506 million). Intangible assets and property, plant and equipment came in at €436 million and were thus nearly unchanged year on year (2020: €413 million).

Financial assets increased by €5,668 million to €72,038 million (2020: €66,370 million). Of this figure, €4,468 million was attributable to a capital increase at Bayer Pharma AG. The change in the shareholding structure, as part of intra-Group contributions in kind through a share swap, generated a book profit of €3,509 million, with additions through new shares of Neunte Bayer VV GmbH (€8,630 million) partially offset by retirements at Bayer NV, Belgium, (€531 million) and Zweite K-W-A Beteiligungsgesellschaft mbH (€4,590 million). Loans to subsidiaries declined to €13,866 million (2020: €15,927 million), primarily due to the repayment of a €2,000 million loan to Bayer CropScience AG.

Inventories increased slightly to €2,579 million (2020: €2,396 million). Receivables from subsidiaries, which mainly comprised loan receivables, fell to €2,001 million (2020: €4,633 million). The decline in other assets to €795 million (2020: €1,645 million) largely resulted from a decrease in short-term deposits. Holdings of securities declined to €1,219 million (2020: €2,801 million) due to the maturity of short-term euro investments with indefinite maturities.

Equity rose by €2,145 million to €30,450 million (2020: €28,305 million).

Provisions climbed to €5,051 million (2020: €4,790 million). The provisions recognized for the excess of pension liabilities over plan assets increased by €217 million to €1,913 million (2020: €1,696 million). Provisions for taxes fell to €571 million (2020: €732 million), primarily due to the change in provisions for income taxes not yet finally assessed. Miscellaneous provisions increased to €2,567 million (2020: €2,362 million), of which personnel-related provisions saw an increase to €1,777 million (2020: €1,628 million). This was mainly due to the increase in provisions for variable compensation components to €528 million (2020: €189 million), amid a decline in provisions for restructuring measures to €948 million (2020: €1,140 million). Other miscellaneous provisions increased to €790 million (2020: €734 million).

Liabilities including deferred income – net of deductible receivables – fell to €48,594 million (2020: €50,194 million). Additional bonds with a volume of €4,000 million were issued in 2021, and a bond of €750 million was redeemed at maturity, resulting in a total figure of €14,550 million (2020: €11,300 million). Liabilities to banks fell by €2,915 million to €333 million (2020: €3,248 million). Payables to subsidiaries fell to €29,900 million (2020: €33,098 million). Miscellaneous liabilities increased to €1,596 million (2020: €445 million), mainly due to the issuance of commercial paper.

Financial obligations rose to €48,512 million (2020: €47,457 million). Intra-Group financial obligations fell by €460 million to €32,406 million. The €3,186 million increase in loan liabilities (2020: €1,658 million) was more than offset by the €2,162 million decrease in short-term loans (2020: €26,056 million) and the €1,484 million decline in liabilities from call deposits (2020: €5,152 million). Liabilities to third parties rose by €1,515 million (2020: €14,591 million), mainly due to a €3,250 million increase in bonds, a €1,211 million increase in commercial paper and a €2,915 million decrease in loans from banks. After deduction of €3,774 million (2020: €5,561 million) in cash and cash equivalents and marketable securities, net debt was above the previous year at €44,738 million (2020: €41,896 million).

All of the own shares acquired in 2021 were subsequently resold, so the transactions were not – except for a marginal settlement of fractions – reflected in equity at the closing date. Details are provided in the stock-based compensation section of the “Equity” chapter in the Notes to the Financial Statements of Bayer AG.

5.3 Forecast, Opportunities and Risks for Bayer AG

Bayer AG is largely exposed to the same opportunities and risks as the Bayer Group. In addition to the following statements, please also refer to the “Report on Future Perspectives and on Opportunities and Risks” section on the Bayer Group.

Bayer AG is expected to generate sales of approximately €16 billion and an operating loss of around €1 billion in 2022. These figures include Bayer AG’s own operational business and the businesses leased from Bayer CropScience AG and Bayer Pharma AG.

Provided the global economy continues to recover from the COVID-19 pandemic, Bayer AG’s business will develop positively in 2022, albeit at a lower level. This positive development will continue to be driven by the Pharmaceuticals Division and its primary sales driver Xarelto™. Sales from the intra-Group charging-on of services will be at approximately the same level as in 2021.

In addition, the earnings of most German subsidiaries are transferred directly to Bayer AG under profit and loss transfer and control agreements. Furthermore, 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.

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 2021 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

	2020	2021
R&D expenses (€ million)	2,401	2,431
Employees[1]	18,795	18,701
Employees by function[1]		
Production	11,357	11,334
Marketing and distribution	971	1,043
R&D	4,828	4,810
Administration	1,639	1,514
Employees by gender[1]		
Women	6,655	6,654
Men	12,140	12,047
Personnel expenses (€ million)[2]	2,564	3,004
Pension obligations (€ million)	6,134	6,840
Short-term incentive program (€ million)	143	479
Procurement spend (€ billion)	4.4	5.0
Safety		
Recordable Incident Rate (RIR)	0.49	0.41
Lost Time Recordable Incident Rate (LTRIR)	0.39	0.31
Process Safety Incident Rate (PSI-R)	0.18	0.24
Environmental protection		
Total energy consumption (terajoules)	6,267	6,188
Total greenhouse gas emissions (million metric tons of CO_2 equivalents)	0.42	0.39
Water use (million cubic meters)	5.48	4.78
Total waste generated (thousand metric tons)	216	243

[1] Full-time equivalents (FTEs) as of December 31, 2021

[2] 2020 figure restated due to switch from cost-of-sales method to total cost (nature of expense) method

B Consolidated Financial Statements

Bayer Group Consolidated Income Statements

B 1

€ million	Note	2020	2021
Net sales	**[6]**	**41,400**	**44,081**
Cost of goods sold		(19,138)	(16,816)
Gross profit		**22,262**	**27,265**
Selling expenses		(13,053)	(12,363)
Research and development expenses		(7,126)	(5,412)
General administration expenses		(2,879)	(2,962)
Other operating income	[7]	1,540	1,500
Other operating expenses	[8]	(16,913)	(4,675)
EBIT[1]		**(16,169)**	**3,353**
Equity-method income (loss)	[10.1]	(96)	49
Financial income		885	526
Financial expenses		(1,870)	(1,882)
Financial result	**[10]**	**(1,081)**	**(1,307)**
Income before income taxes		**(17,250)**	**2,046**
Income taxes	[11]	1,689	(1,024)
Income from continuing operations after income taxes		**(15,561)**	**1,022**
of which attributable to noncontrolling interest		8	22
of which attributable to Bayer AG stockholders		(15,569)	1,000
Income from discontinued operations after income taxes	**[5.3]**	**5,074**	**–**
of which attributable to noncontrolling interest		–	–
of which attributable to Bayer AG stockholders		5,074	–
Income after income taxes		**(10,487)**	**1,022**
of which attributable to noncontrolling interest	[12]	8	22
of which attributable to Bayer AG stockholders (net income)		**(10,495)**	**1,000**
€			
Earnings per share	**[13]**		
From continuing operations	**[13]**		
Basic		(15.85)	1.02
Diluted		(15.85)	1.02
From discontinued operations	**[13]**		
Basic		5.17	–
Diluted		5.17	–
From continuing and discontinued operations	**[13]**		
Basic		(10.68)	1.02
Diluted		(10.68)	1.02

[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	2020	2021
Income after income taxes		**(10,487)**	**1,022**
of which attributable to noncontrolling interest	[12]	8	22
of which attributable to Bayer AG stockholders		(10,495)	1,000
Remeasurements of the net defined benefit liability for post-employment benefit plans	[22]	(125)	1,593
Income taxes	[11]	50	(391)
Other comprehensive income from remeasurements of the net defined benefit liability for post-employment benefit plans		**(75)**	**1,202**
Changes in fair values of equity instruments measured at fair value		44	111
Income taxes	[11]	(1)	(10)
Other comprehensive income from equity instruments measured at fair value		**43**	**101**
Other comprehensive income relating to associates accounted for using the equity method		**(7)**	**39**
Other comprehensive income that will not be reclassified subsequently to profit or loss		**(39)**	**1,342**
Changes in fair values of derivatives designated as cash flow hedges	[27.3]	87	(143)
Reclassified to profit or loss		(6)	26
Income taxes	[11]	(32)	54
Other comprehensive income from cash flow hedges		**49**	**(63)**
Changes in time value of options used as hedging instrument	[17]	(1)	(1)
Other comprehensive income from time value of options		**(1)**	**(1)**
Changes in exchange differences recognized on translation of operations outside the eurozone	[21]	(3,440)	2,415
Reclassified to profit or loss	[21]	(95)	(126)
Other comprehensive income from exchange differences	**[21]**	**(3,535)**	**2,289**
Other comprehensive income relating to associates accounted for using the equity method		**2**	**(6)**
Other comprehensive income that may be reclassified subsequently to profit or loss		**(3,485)**	**2,219**
Total other comprehensive income[1]		**(3,524)**	**3,561**
of which attributable to noncontrolling interest		(27)	13
of which attributable to Bayer AG stockholders		(3,497)	3,548
Total comprehensive income		**(14,011)**	**4,583**
of which attributable to noncontrolling interest		(19)	35
of which attributable to Bayer AG stockholders		(13,992)	4,548

2020 figures restated

[1] Other comprehensive income is recognized outside profit or loss in equity.

Bayer Group Consolidated Statements of Financial Position

B 3

€ million	Note	Dec. 31, 2020	Dec. 31, 2021
Noncurrent assets			
Goodwill	[14]	36,418	40,106
Other intangible assets	[14]	25,424	26,258
Property, plant and equipment	[15]	11,723	12,688
Investments accounted for using the equity method	[16]	491	629
Other financial assets	[17]	1,555	2,026
Other receivables	[20]	835	1,376
Deferred taxes	[11]	4,683	4,580
		81,129	**87,663**
Current assets			
Inventories	[18]	10,961	11,314
Trade accounts receivable	[19]	9,552	10,047
Other financial assets	[17]	7,940	3,342
Other receivables	[20]	1,685	1,709
Claims for income tax refunds		1,233	1,526
Cash and cash equivalents		4,191	4,564
Assets held for sale	[5.3]	113	76
		35,675	**32,578**
Total assets		**116,804**	**120,241**
Equity	**[21]**		
Capital stock		2,515	2,515
Capital reserves		18,261	18,261
Other reserves		9,747	12,244
Equity attributable to Bayer AG stockholders		**30,523**	**33,020**
Equity attributable to noncontrolling interest		152	148
		30,675	**33,168**
Noncurrent liabilities			
Provisions for pensions and other post-employment benefits	[22]	8,454	7,175
Other provisions	[23]	4,245	8,776
Refund liabilities	[6]	8	283
Contract liabilities	[6]	720	770
Financial liabilities	[24]	33,201	36,481
Income tax liabilities		247	1,601
Other liabilities	[26]	1,311	1,653
Deferred taxes	[11]	1,175	931
		49,361	**57,670**
Current liabilities			
Other provisions	[23]	10,107	6,823
Refund liabilities	[6]	4,455	4,564
Contract liabilities	[6]	3,594	4,052
Financial liabilities	[24]	8,569	4,391
Trade accounts payable	[25]	5,678	6,792
Income tax liabilities		2,290	686
Other liabilities	[26]	2,075	2,095
		36,768	**29,403**
Total equity and liabilities		**116,804**	**120,241**

2020 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
Jan. 1, 2020	**2,515**	**18,261**	**26,151**	**(75)**	**310**
Total comprehensive income					
Income after income taxes			(10,495)		
Other comprehensive income			(77)	(3,507)	36
Miscellaneous other changes			216	1	(229)
Equity transactions with owners					
Capital increase					
Dividend payments			(2,751)		
Other changes			13		
Dec. 31, 2020	**2,515**	**18,261**	**13,057**	**(3,581)**	**117**
Total comprehensive income					
Income after income taxes			1,000		
Other comprehensive income			1,203	2,270	140
Miscellaneous other changes			136	(1)	(45)
Equity transactions with owners					
Capital increase					
Dividend payments			(1,965)		
Other changes			(86)		
Dec. 31, 2021	**2,515**	**18,261**	**13,345**	**(1,312)**	**212**

2020 figures restated

B 4 (continued)

€ million	Cash flow hedges	Other reserves[1]	Equity attributable to Bayer AG stockholders	Equity attributable to non-controlling interest	Equity
Jan. 1, 2020	**91**	**–**	**47,253**	**180**	**47,433**
Total comprehensive income					
Income after income taxes			(10,495)	8	(10,487)
Other comprehensive income	49	2	(3,497)	(27)	(3,524)
Miscellaneous other changes	12				
Equity transactions with owners					
Capital increase					
Dividend payments			(2,751)	(17)	(2,768)
Other changes			13	8	21
Dec. 31, 2020	**152**	**2**	**30,523**	**152**	**30,675**
Total comprehensive income					
Income after income taxes			1,000	22	1,022
Other comprehensive income	(63)	(2)	3,548	13	3,561
Miscellaneous other changes	(90)				
Equity transactions with owners					
Capital increase					
Dividend payments			(1,965)	(30)	(1,995)
Other changes			(86)	(9)	(95)
Dec. 31, 2021	**(1)**	**–**	**33,020**	**148**	**33,168**

2020 figures restated

[1] Other reserves include the revaluation reserve of €0 million (2020: €2 million)

Bayer Group Consolidated Statements of Cash Flows

B 5

€ million	Note	2020	2021
Income from continuing operations after income taxes		(15,561)	1,022
Income taxes		(1,689)	1,024
Financial result		1,081	1,307
Income taxes paid		(1,063)	(2,159)
Depreciation, amortization and impairment losses (loss reversals)		13,259	3,056
Change in pension provisions		(91)	(295)
(Gains) losses on retirements of noncurrent assets		(126)	(217)
Decrease (increase) in inventories		(900)	(173)
Decrease (increase) in trade accounts receivable		695	(61)
(Decrease) increase in trade accounts payable		(347)	854
Changes in other working capital, other noncash items		9,311	731
Net cash provided by (used in) operating activities from continuing operations		**4,569**	**5,089**
Net cash provided by (used in) operating activities from discontinued operations	[5.3]	334	–
Net cash provided by (used in) operating activities		**4,903**	**5,089**
Cash outflows for additions to property, plant, equipment and intangible assets		(2,418)	(2,611)
Cash inflows from sales of property, plant, equipment and other assets		329	373
Cash inflows from (outflows for) divestments less divested cash		4,172	(6)
Cash inflows from noncurrent financial assets		673	437
Cash outflows for noncurrent financial assets		(245)	(400)
Cash outflows for acquisitions less acquired cash		(2,263)	(1,340)
Interest and dividends received		134	137
Cash inflows from (outflows for) current financial assets		(4,455)	4,265
Net cash provided by (used in) investing activities		**(4,073)**	**855**
Dividend payments		(2,768)	(1,993)
Issuances of debt		10,891	6,592
Retirements of debt		(6,424)	(9,044)
Interest paid including interest-rate swaps		(1,301)	(1,227)
Interest received from interest-rate swaps		25	27
Net cash provided by (used in) financing activities		**423**	**(5,645)**
Change in cash and cash equivalents due to business activities	**[31]**	**1,253**	**299**
Cash and cash equivalents at beginning of year		**3,185**	**4,191**
Change in cash and cash equivalents due to changes in scope of consolidation		(7)	39
Change in cash and cash equivalents due to exchange rate movements		(240)	35
Cash and cash equivalents at end of year		**4,191**	**4,564**

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 healthcare 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, 2021, at its meeting on February 18, 2022, submitted the prepared statements to the Audit Committee and the Supervisory Board for examination and approval, and released them for publication.

2. Effects of new financial reporting standards

Financial reporting standards applied for the first time in 2021

The following amendments to financial reporting standards were applied for the first time as of January 1, 2021. The amendments had no material impact on the Group's financial position or results of operations.

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Financial Reporting Standards Amendments With No Material Impact

Amendments to standards		Mandatory application
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
IFRS 4	Amendments to IFRS 4: Insurance Contracts: Extension of the Temporary Exemption from Applying IFRS 9	Jan. 1, 2021
IFRS 16	Amendments to IFRS 16 Leases: COVID-19-Related Rent Concessions beyond 30 June 2021	April 1, 2021

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 2021 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:

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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
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	No material effects expected
	Annual Improvements to IFRS Standards 2018–2020 Cycle	Jan. 1, 2022	No material effects expected
IFRS 17	Insurance Contracts, including amendments to IFRS 17 and amendments to IFRS 17 Insurance Contracts: Initial Application of IFRS 17 and IFRS 9 – Comparative Information	Jan. 1, 2023	Effects currently being evaluated
IAS 1	Amendments to IAS 1: Presentation of Financial Statements: Classification of Liabilities as Current or Non-current, including Deferral of Effective Date	Jan. 1, 2023	Effects currently being evaluated
IAS 1	Amendments to IAS 1: Presentation of Financial Statements and IFRS Practice Statement 2: Disclosure of Accounting Policies	Jan. 1, 2023	Effects currently being evaluated
IAS 8	Amendments to IAS 8: Accounting Policies, Changes in Accounting Estimates and Errors: Definition of Accounting Estimates	Jan. 1, 2023	Effects currently being evaluated
IAS 12	Amendments to IAS 12: Income Taxes: Deferred Tax related to Assets and Liabilities arising from a Single Transaction	Jan. 1, 2023	Effects currently being evaluated

3. Reporting policies, methods and critical accounting estimates

The consolidated financial statements as of December 31, 2021, 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 and adopted by the European Union as at December 31, 2021. 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, 2021, 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 arising from the remeasurement of investments accounted for using the equity method due to Bayer obtaining control or losing significant influence are also 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 always 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, such exchange differences are reclassified from equity to profit or loss and recognized in other operating income/expenses. When a net investment in a foreign operation is reduced but control is retained, exchange differences are reclassified from other comprehensive income to profit or loss and recognized on a prorated basis under exchange gains or losses in other financial income and expenses within the financial result.

The exchange rates for major currencies against the euro varied as follows:

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Exchange Rates for Major Currencies

		BRL	CAD	CNY	GBP	JPY	RUB	USD
		Brazil	**Canada**	**China**	**U.K.**	**Japan**	**Russia**	**U.S.A.**
Closing rate	2020	6.37	1.56	7.98	0.90	126.46	91.46	1.23
	2021	6.31	1.44	7.20	0.84	130.41	85.35	1.13
Average rate	2020	5.80	1.53	7.87	0.89	121.71	81.86	1.14
	2021	6.37	1.48	7.63	0.86	129.82	87.11	1.18

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 usually 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. Furthermore, sales are reduced by the amount of the refund liability for expected returns of defective goods or of saleable products that may be returned under contractual arrangements, with this reduction taking place at the date of revenue recognition or when a reliable estimate can be made. Refund liabilities are recognized for expected sales deductions and product returns. Sales deductions and refund liabilities are estimated primarily on the basis of historical experience, specific contractual terms, price information and thus future expectations of sales development. The underlying assumptions applied for refund liabilities are reviewed at each closing date and revised where necessary.

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. 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.

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. Any commodity price risk that Bayer is exposed to as a result is hedged using derivatives. Changes in the fair value of these derivatives are recognized in other operating 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. Development costs for internal sofware projects can be capitalized, while costs in connection with the implementation of cloud applications are usually recognized through profit or loss. 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.

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Useful Lives of Other Intangible Assets	
Patents and technologies	8 to 30 years
Trademarks	10 to 35 years
Marketing and distribution rights, customer relationships	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, a review is conducted at the end of the period to ascertain whether there are any indications of impairment, and impairment testing may then potentially be 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.

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Useful Life 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

A review is conducted at the end of the period to ascertain whether there are any indications of impairment. 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 in property, plant or equipment, 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 three 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.

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 nonlease 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 and 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 Century Therapeutics, Inc., United States, and Pyxis Oncology, Inc., 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 healthcare 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. Where there is insufficient empirical data on corporate bond yields with longer-term residual maturities, the yield structure is derived from government bond yields plus spread to reflect the higher risk of default. 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 for property, plant or equipment if they can be reliably estimated, and are covered by provisions. 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.

Obligations arising from stock-based programs that involve cash settlement pursuant to IFRS 2 (Share-based Payment) are covered by provisions 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.

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. With respect to the proceedings outlined in Note [30] “Legal Risks”, further information on litigations, estimated financial effects, uncertainties and contingent liabilities, as well as the recognition and amounts of individual provisions, can be withheld under IAS 37.92 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.

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 the stock-based compensation programs issued until 2020. 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 that hedge purchase prices, reclassification is to the cost of goods sold. For commodity futures that hedge selling prices, reclassification is to sales.

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). In 2020, this mainly applied 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

An acquisition is a transaction or other event that involves the purchase of an integrated set of activities and assets that include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. 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.)

If the assets acquired do not constitute a business, the individually identifiable assets acquired and liabilities assumed are recognized. The acquisition costs are allocated to the individual assets and liabilities at the acquisition date based on their fair values. Such a transaction or event does not result in goodwill.

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.

After contracting in 2020 due to the pandemic, the global economy registered substantial growth in 2021, mainly driven by rising rates of COVID-19 vaccinations that paved the way for an easing of protective measures and contact restrictions. However, the surge in the number of people contracting the Omicron variant led to restrictions being tightened once again toward the end of the year, and also caused problems in international supply chains.

In 2020, the Pharmaceuticals segment had been 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. In 2021, however, the ophthalmology, radiology and women's health businesses recovered from the impact of the COVID-19 restrictions, representing a major factor in the sales increase registered by the division. Whereas our Consumer Health segment continued to show strong growth, especially in Nutritionals, our Crop Science segment benefited from the robust growth of the global seed and crop protection market.

Our entire business underwent regular impairment testing in the fourth quarter. The results are explained in Note [14].

In addition, further assets, particularly trade accounts receivable and inventories, were tested separately. In the case of trade accounts receivable in particular, we performed an additional review of the expected credit loss model with respect to the estimation of future economic conditions over the course of the COVID-19 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 pandemic.

Inventory sales and turnover were also examined. In 2021, 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, especially in view of the rapid spread of the Omicron variant. This 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, 2021, 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 other factors, and the consolidation of intersegment sales (2021: €34 million; 2020: €222 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], "Legal Risks".

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).
// 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.

The key data by segment is as follows:

B 4/2

Key Data by Segment

	Crop Science		Pharmaceuticals		Consumer Health	
€ million	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
Net sales (external)	18,840	20,207	17,243	18,349	5,054	5,293
Currency- and portfolio-adjusted change[1]	+1.3%	+11.1%	−1.5%	+7.4%	+5.2%	+6.5%
Intersegment sales	7	12	47	22	–	–
Net sales (total)	18,847	20,219	17,290	18,371	5,054	5,293
EBIT[1]	(18,629)	(495)	3,467	4,469	992	808
EBITDA before special items[1]	4,536	4,698	6,016	5,779	1,114	1,190
EBITDA margin before special items[1]	24.1%	23.2%	34.9%	31.5%	22.0%	22.5%
ROCE[1]	−28.6%	−0.9%	15.9%	18.6%	7.7%	6.4%
Net cash provided by operating activities	99	1,272	4,064	3,493	987	1,030
Capital expenditures (newly capitalized)	1,317	1,240	1,386	1,308	170	207
Depreciation, amortization and impairments	12,029	1,435	844	1,001	68	336
of which impairment losses/impairment loss reversals	9,335	(822)	(110)	130	(252)	5
Clean depreciation and amortization[1]	2,745	2,278	984	986	321	336
Research and development expenses	4,138	2,029	2,743	3,139	195	199

[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	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
Net sales (external)	204	203	59	29	41,400	44,081
Currency- and portfolio-adjusted change[1]	−8.3%	−11.6%	–	–	+0.6%	+8.9%
Intersegment sales	168	–	(222)	(34)	–	–
Net sales (total)	372	203	(163)	(5)	41,400	44,081
EBIT[1]	110	(27)	(2,109)	(1,402)	(16,169)	3,353
EBITDA before special items[1]	178	95	(383)	(583)	11,461	11,179
EBITDA margin before special items[1]	–	–	–	–	27.7%	25.4%
ROCE[1]	–	–	–	–	−16.5%	3.8%
Net cash provided by operating activities	121	144	(702)	(850)	4,569	5,089
Capital expenditures (newly capitalized)	66	93	199	156	3,138	3,004
Depreciation, amortization and impairments	68	70	250	214	13,259	3,056
of which impairment losses/impairment loss reversals	(1)	1	4	2	8,976	(684)
Clean depreciation and amortization[1]	67	70	249	214	4,366	3,884
Research and development expenses	5	4	45	41	7,126	5,412

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

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	2020	2021
EBITDA before special items of segments	11,844	11,762
EBITDA before special items of Enabling Functions and Consolidation	(383)	(583)
EBITDA before special items[1]	**11,461**	**11,179**
Depreciation, amortization and impairment losses/loss reversals before special items of segments	(4,117)	(3,670)
Depreciation, amortization and impairment losses/loss reversals before special items of Enabling Functions and Consolidation	(249)	(214)
Depreciation, amortization and impairment losses/loss reversals before special items	**(4,366)**	**(3,884)**
EBIT before special items of segments	7,727	8,092
EBIT before special items of Enabling Functions and Consolidation	(632)	(797)
EBIT before special items[1]	**7,095**	**7,295**
Special items of segments	(21,787)	(3,337)
Special items of Enabling Functions and Consolidation	(1,477)	(605)
Special items[1]	**(23,264)**	**(3,942)**
EBIT of segments	(14,060)	4,755
EBIT of Enabling Functions and Consolidation	(2,109)	(1,402)
EBIT[1]	**(16,169)**	**3,353**
Financial result	(1,081)	(1,307)
Income before income taxes	**(17,250)**	**2,046**

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

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	2020	2021	2020	2021
Europe/Middle East/Africa	12,881	13,648	24,426	24,679
of which Germany	2,361	2,545	15,339	15,461
of which Switzerland	496	542	5,119	4,933
North America	14,352	14,952	44,550	49,587
of which United States	12,885	13,397	43,074	48,004
Asia/Pacific	8,267	8,849	1,913	1,930
of which China	3,483	3,856	588	623
Latin America	5,900	6,632	2,676	2,856
of which Brazil	2,994	3,476	1,653	1,632
Total	**41,400**	**44,081**	**73,565**	**79,052**

2020 figures restated

Information on major customers

Revenues from transactions with a single customer in no case exceeded 10% of Bayer Group sales in 2021 or 2020.

5. Scope of consolidation; subsidiaries and affiliates

5.1 Changes in the scope of consolidation

Changes in the scope of consolidation in 2021 were as follows:

B 5.1/1

Change in the Number of Consolidated Companies

Bayer AG and consolidated companies	Germany	Other countries	Total
January 1, 2021	46	339	385
Changes in scope of consolidation	(2)	(6)	(8)
Additions	2	1	3
Retirements	–	(6)	(6)
December 31, 2021	**46**	**328**	**374**

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.

In addition, 33 (2020: 21) associates and six (2020: six) joint ventures were accounted for in the consolidated financial statements using the equity method. Details of these companies are given in Note [16].

The IPOs of Century Therapeutics, Inc., United States, and Pyxis Oncology, Inc., United States, resulted in the Bayer Group losing significant influence, which led to a change in accounting method. As such, the shares held in both companies are no longer accounted for using the equity method, and are instead measured at fair value through profit or loss.

A total of 72 (2020: 69) subsidiaries, including one (2020: one) structured entity and 10 (2020: 11) 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 0.2% 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 2021 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/shareownership2021.

5.2 Business combinations and other acquisitions

Acquisitions in 2021

On August 19, 2021, Bayer acquired 100% of the shares in the biopharmaceutical company Vividion Therapeutics, Inc., United States. This company has been fully consolidated since September 1, 2021. Vividion utilizes novel discovery technologies to unlock high value, traditionally undruggable targets with precision therapeutics, with initial focus on targets relevant to oncology and immunology. Vividion's programs include research into a transcription factor NRF2 antagonist for the potential treatment of NRF2 mutant cancers, as well as NRF2 activators for various inflammatory diseases such as irritable bowel disease. The transaction gives Bayer full rights to Vividion's proprietary discovery platform, which comprises three integrated, synergistic components: a novel chemoproteomic screening technology, an integrated data portal and a proprietary chemistry library. The acquisition strengthens Bayer's small molecule capabilities and expands the company's reach into new modalities.

Bayer paid an upfront consideration of around €1,252 million to acquire Vividion. Further amounts totaling up to around €422 million are payable upon the achievement of pre-defined research and development milestones. A liability of €412 million, weighted according to the probability that the payments will have to be made, was recognized for this purpose. The purchase price mainly pertains to goodwill, which in turn largely reflects the anticipated innovation potential and amounts to €1,438 million based on the current purchase price allocation. In addition, an amount of €55 million was recognized for patents and technologies, €43 million for research and development projects, and around €128 million for other assets. The goodwill recognized is not tax-deductible. Vividion has been assigned to the Pharmaceuticals segment. The purchase price allocation for Vividion has not yet been completed as the process of compiling and reviewing the underlying financial information is ongoing. As such, the allocation of the purchase price to individual assets and liabilities may still be subject to change.

Sales of €24 million and after-tax income of minus €1 million were recorded for the acquired business since the date of first-time consolidation. Had the transaction already been concluded on January 1, 2021, it would have contributed additional sales of approximately €43 million and additional earnings of around minus €5 million to the Pharmaceuticals segment.

On June 2, 2021, Bayer completed the acquisition of 100% of the shares in two biotech companies: Noria Therapeutics Inc., United States, and PSMA Therapeutics Inc., United States. Through this acquisition, Bayer obtained exclusive rights to a differentiated alpha radionuclide therapy based on actinium-225 and a small molecule targeting prostate-specific membrane antigen (PSMA), and in doing so broadened its oncology portfolio of targeted alpha therapies (TAT). Bayer paid an upfront consideration of €8 million in total, and will make potential milestone payments of up to around €120 million until launch followed by potential additional sales-based milestone payments that will also amount to up to around €120 million. The acquisition does not fall within the scope of IFRS 3 and is presented as a capital expenditure for intangible assets relating to R&D projects. The two companies have been assigned to the Pharmaceuticals segment.

Acquisitions in 2020

On September 9, 2020, Bayer completed the acquisition of 100% of the shares in biotech company KaNDy Therapeutics Ltd., 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 of up to €570 million. 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 internally developed 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), 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 €1,766 million are payable upon the achievement of pre-defined milestones. A liability of €1,095 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 goodwill and other 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 €2,141 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 been completed. The acquired assets and assumed liabilities are shown in the table below. There were no material effects on the income statement.

B 5.2/1

Acquired Assets and Assumed Liabilities (Fair Values at Acquisition Date)

€ million	Prior to adjustment of the purchase price allocation	Adjustment of the purchase price allocation	After adjustment of the purchase price allocation
Goodwill	1,719	422	2,141
Patents and technologies	1,157	(912)	245
R&D projects	245	(36)	209
Trademarks	1	66	67
Other rights	–	270	270
Property, plant and equipment	51	13	64
Other financial assets	6	19	25
Inventories	9	–	9
Trade accounts receivable	41	(29)	12
Other current assets	30	(19)	11
Cash and cash equivalents	25	–	25
Deferred tax assets	8	(3)	5
Other personel-related provisions	(19)	(1)	(20)
Provisions for collaborations	(117)	100	(17)
Tax provisions	–	(21)	(21)
Financial liabilities	(12)	2	(10)
Lease liabilities	(16)	(5)	(21)
Trade accounts payable	(126)	76	(50)
Other liabilities	(3)	(64)	(67)
Deferred tax liabilities	(350)	160	(190)
Net assets	**2,649**	**38**	**2,687**

On November 16, 2020, Bayer increased its interest in Noho Health, Inc. (NoHo), United States, from 11.9% to 67.8%. The company was fully consolidated as of that date. In 2021, Bayer increased its interest to approximately 73.0%. The purchase price for these additional shares amounted to around €5 million. The remaining shares in circulation 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, primarily pertains to the Care/of brand, under which NoHo offers consumers a personalized regimen of nutritional supplements. The acquisition strengthens Bayer's presence and digital capabilities in this fast-growing business within its Consumer Health segment.

The purchase price allocation was completed in November 2021. Based on the purchase price allocation, the acquired goodwill amounts to approximately €214 million and reflects in particular the business' high growth potential and synergies between Bayer products and Care/of's distribution channels.

5.3 Discontinued operations, assets and liabilities held for sale, and divestments

Discontinued operations

There were no discontinued operations to report in 2021. In the prior year, the discontinued operations reported primarily pertained to the Animal Health business in view of its sale to Elanco Animal Health Inc. (Elanco), United States, on the basis of the purchase agreement of August 20, 2019. The business was transferred to Elanco on August 1, 2020. The final purchase price, including adjustments typical for this type of transaction, was determined in the first quarter of 2021. It amounted to €5,763 million, comprising a cash component of €4,307 million and an equity component of €1,456 million. The divestment gain amounted to €5,019 million and was recognized in other operating income.

The prior-year income statements for the discontinued operations pertaining to the divestment of the Animal Health business unit are given below:

B 5.3/1

Income Statements for Discontinued Operations

	Animal Health	
€ million	2020	2021
Net sales	**1,150**	**–**
Cost of goods sold	(332)	–
Gross profit	**818**	**–**
Selling expenses	(345)	–
Research and development expenses	(78)	–
General administration expenses	(65)	–
Other operating income/expenses	5,178	–
EBIT[1]	**5,508**	**–**
Financial result	**(7)**	**–**
Income before income taxes	**5,501**	**–**
Income taxes	(444)	–
Income after income taxes	**5,057**	**–**
of which attributable to noncontrolling interest	–	–
of which attributable to Bayer AG stockholders (net income)	5,057	–

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

Information on tax effects is provided in Note [11].

There was also a €20 million purchase price adjustment from the divestment of chemical park operator Currenta in 2020, which resulted in income after income taxes of €17 million. The purchase price adjustment was recognized in other operating income.

The cash flows for the discontinued operations in 2020 were as follows:

B 5.3/2

Cash Flows from Discontinued Operations

	Animal Health	
€ million	**2020**	**2021**
Net cash provided by (used in) operating activities	334	–
Net cash provided by (used in) investing activities	(32)	–
Net cash provided by (used in) financing activities	(302)	–
Change in cash and cash equivalents	**–**	**–**

As no cash was assigned to the discontinued operations, the balance of the cash provided was deducted again in financing activities.

Assets and liabilities held for sale

The assets and liabilities held for sale as of December 31, 2021, amounted to €76 million (December 31, 2020: €113 million), with intangible assets accounting for €48 million and property, plant and equipment for €28 million. The intangible assets held for sale pertained to the planned divestment of the Marvelon™ and Mercilon™ brands in China, Hong Kong, Macau and Vietman within the Pharmaceuticals segment. The property, plant and equipment held for sale concerned the planned sale of a production facility in Brazil within the Pharmaceuticals segment. Both transactions are expected to be concluded in 2022. 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.

Notes to the Income Statements

6. Net sales

Total reported net sales in 2021 increased by €2,681 million, or 6.5%, year on year to €44,081 million. Sales were derived primarily from product deliveries (€40,111 million; 2020: €37,744 million) and licenses (€3,230 million; 2020: €3,020 million). The license revenues amounted to €2,219 million (2020: €2,221 million) for Crop Science, €1,006 million (2020: €789 million) for Pharmaceuticals and €3 million (2020: €3 million) for Consumer Health. Breakdowns of net sales by segment and geographical area are given in the overview in Note [4].

Sales of €1,975 million were recognized in 2021 (2020: €1,722 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, 2021, 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	2020	2021
Transaction price outstanding as of Dec. 31	**873**	**850**
of which to be recognized within 1 year	180	149
of which to be recognized between 1 and 2 years	129	145
of which to be recognized between 2 and 3 years	113	132
of which to be recognized between 3 and 4 years	106	131
of which to be recognized between 4 and 5 years	106	131
of which to be recognized after more than 5 years	239	162

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	2020	2021
Contract liability balance as of Jan. 1	**4,052**	**4,314**
Changes due to business combinations	7	96
Additions	7,283	8,311
Revenue recognized in the current year that was included in the contract liability balance as of Jan. 1	(3,151)	(3,575)
Revenue recognized in the current year that was not included in the contract liability balance as of Jan. 1	(3,503)	(4,663)
Other	(38)	68
Exchange differences	(336)	271
Contract liability balance as of Dec. 31	**4,314**	**4,822**

2020 figures restated

Amounts for rebates, which are reported separately as refund liabilities, amounted to 9.8% of total net sales in 2021 (2020: 9.7%).

The refund liabilities for product returns amounted to 1.2% of total net sales in 2021 (2020: 1.1%).

7. Other operating income

Other operating income was comprised as follows:

B 7/1

Other Operating Income

€ million	2020	2021
Gains on retirements of noncurrent assets	185	244
Income from reversal of impairment losses on receivables	110	83
Income from reversal of unutilized provisions	18	106
Gains from derivatives	345	71
Sales revenues from products acquired through barter transactions	338	299
Miscellaneous operating income	544	697
Total	**1,540**	**1,500**

Gains on retirements of noncurrent assets primarily related to the sale of an office building (€86 million) in the Pharmaceuticals segment as part of a sale and leaseback transaction, as well as the divestment of several smaller brands, especially in the Crop Science segment. A gain from the sale of noncapitalized transfer rights was also included here (All Other Segments).

Income from the reversal of unutilized provisions was mainly attributable to disputed payment obligations in connection with the “renewables levy” under Germany’s renewable energy act (EEG).

Miscellaneous operating income was mainly generated in connection with a patent dispute surrounding Jivi™ (€288 million). In addition, the hyperinflation of nonmonetary assets and liabilities as well as equity in Argentina resulted in the recognition of €35 million in income (net).

8. Other operating expenses

Other operating expenses were comprised as follows:

B 8/1

Other Operating Expenses

€ million	2020	2021
Losses on retirements of noncurrent assets	(59)	(26)
Impairment losses on receivables	(158)	(128)
Expenses related to significant legal risks	(13,330)	(3,689)
Losses from derivatives	(291)	(113)
Cost of goods sold for products acquired through barter transactions	(357)	(297)
Impairment losses on goodwill	(2,238)	–
Miscellaneous operating expenses	(480)	(422)
Total	**(16,913)**	**(4,675)**

Expenses related to significant legal risks were mainly attributable to the allocation to provisions for litigations – in the discounted amount of €3.5 billion – in the second quarter of 2021 in connection with the glyphosate litigations (Crop Science segment). Expenses related to significant legal risks also included expenses for the litigation surrounding polychlorinated biphenyls, or PCBs (All Other Segments). All of these expenses were reported as special items.

Miscellaneous operating expenses included special charges arising from changes in the fair value of a contingent consideration (Pharmaceuticals segment) as well as donations to charitable activities (all 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 [30] and [23].

9. Personnel expenses and employee numbers

Personnel expenses increased by €2,029 million in 2021 to €11,798 million (2020: €9,769 million). This was largely due to a significant year-on-year increase in allocations to provisions for variable compensation under the Group-wide short-term incentive (STI) program and similar programs. Furthermore, there were also additional allocations to provisions in connection with the drive to accelerate the company's transformation.

B 9/1

Personnel Expenses

€ million	2020	2021
Salaries	7,609	9,662
Social expenses and expenses for pensions and other benefits	2,160	2,136
of which for defined contribution pension plans	449	517
of which for defined benefit and other pension plans	527	387
Total	**9,769**	**11,798**

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	2020	2021
Production	40,696	40,837
Marketing and distribution	36,140	35,332
Research and development	15,379	15,256
General administration	9,244	8,147
Total	**101,459**	**99,572**
Apprentices	1,255	1,230

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 2021 was minus €1,307 million (2020: minus €1,081 million), comprising an equity-method income of €49 million (2020: equity-method loss of €96 million), financial expenses of €1,882 million (2020: €1,870 million) and financial income of €526 million (2020: €885 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	2020	2021
Net income (loss) from investments accounted for using the equity method (equity-method income/loss)	(96)	49
Expenses		
Losses from changes in fair values of investments in affiliated companies	–	(66)
Income		
Gains from changes in fair values of investments in affiliated companies	486	34
Miscellaneous income from investments in affiliated companies	16	6
Total	**406**	**23**

Income from investments accounted for using the equity method

Income from investments accounted for using the equity method included equity-method income of €106 million (2020: equity-method loss of €47 million) pertaining to Century Therapeutics, Inc., United States, and of €24 million (2020: equity-method loss of €4 million) pertaining to Pyxis Oncology, Inc., United States. This equity-method income contained gains of €122 million (Century Therapeutics, Inc.) and €28 million (Pyxis Oncology, Inc.) resulting from the remeasurement of the interests that had been accounted for using the equity method until their respective IPOs. The two companies' IPOs resulted in the Bayer Group losing significant influence, which led to a change in accounting method. Since then, the shares held in both companies have been measured at fair value through profit or loss. Expenses of €84 million (€38 million) arose in connection with other "Leaps by Bayer" investments.

Losses from changes in the fair values of investments in affiliated companies pertained to the measurement of Century Therapeutics, Inc. (€50 million) and Pyxis Oncology, Inc. (€12 million).

Gains from changes in the fair values of investments in affiliated companies included gains of €22 million (2020: €94 million) and €12 million (2020: €392 million) pertaining to the interests in Covestro and Elanco, respectively.

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	2020	2021
Interest and similar expenses	**(1,494)**	**(1,276)**
of which interest expense relating to nonfinancial liabilities	(161)	(129)
Interest and similar income	**202**	**346**
of which interest income relating to nonfinancial assets	74	207
Total	**(1,292)**	**(930)**

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	2020	2021
Expenses		
Interest portion of interest-bearing provisions	(102)	(71)
Exchange gain (loss)	(216)	(385)
Miscellaneous financial expenses	(58)	(84)
Income		
Miscellaneous financial income	181	140
Total	**(195)**	**(400)**

The interest portion of noncurrent provisions comprised €81 million (2020: €96 million) in interest expense for pension and other post-employment benefit provisions and €10 million (2020: minus €6 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 €349 million (2020: €419 million) for the unwinding of discount on the present value of the defined benefit obligation and €268 million (2020: €323 million) in interest income from plan assets.

The miscellaneous financial expenses included €14 million (2020: €18 million) in changes in the fair value of liabilities for contingent consideration and €39 million (2020: €15 million) in negative changes in the fair value of financial investments in debt instruments.

The miscellaneous financial income included gains of €80 million (2020: €0 million) arising from changes in the fair value of obligations for contingent consideration and of €26 million (2020: €54 million) arising from positive changes in the fair value of financial investments in debt instruments. Miscellaneous financial income in 2020 included a gain of €85 million from write-ups of and unwinding of discount on tax receivables in connection with stamp duty in Greece.

11. Taxes

The breakdown of tax expenses by origin was as follows:

B 11/1

Tax Expense by Origin

€ million	2020	Of which income taxes	2021	Of which income taxes
Taxes paid or accrued				
Current income taxes				
Germany	(718)	(718)	(604)	(604)
Other countries	(569)	(569)	(1,022)	(1,022)
Other taxes				
Germany	(43)		(17)	
Other countries	(190)		(200)	
	(1,520)	**(1,287)**	**(1,843)**	**(1,626)**
Deferred taxes				
from temporary differences	3,000	3,000	334	334
from tax loss and interest carryforwards and tax credits	(24)	(24)	268	268
	2,976	**2,976**	**602**	602
Total	**1,456**	**1,689**	**(1,241)**	**(1,024)**

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, 2020 Deferred tax assets	Dec. 31, 2020 Deferred tax liabilities	Dec. 31, 2021 Deferred tax assets	Dec. 31, 2021 Deferred tax liabilities
Intangible assets	1,406	4,577	1,660	4,663
Property, plant and equipment	43	727	305	827
Financial assets	37	150	68	339
Inventories	1,806	559	1,946	579
Receivables	204	329	257	199
Other assets	51	8	33	4
Provisions for pensions and other post-employment benefits	2,753	374	2,327	441
Other provisions	2,063	8	1,910	11
Liabilities	1,221	247	1,494	405
Tax loss and interest carryforwards	494	–	481	–
Tax credits	409	–	636	–
	10,487	**6,979**	**11,117**	**7,468**
Set-off	(5,804)	(5,804)	(6,537)	(6,537)
Total	**4,683**	**1,175**	**4,580**	**931**

2020 figures restated

The use of tax loss carryforwards reduced current income taxes in 2021 by €43 million (2020: €136 million). The use of tax credits reduced current income taxes by €56 million (2020: €34 million).

Of the total tax loss and interest carryforwards of €11,975 million, including interest carryforwards of €1,019 million (2020: €9,154 million, including interest carryforwards of €345 million), an amount of €3,817 million, including interest carryforwards of €65 million (2020: €4,761 million, including interest carryforwards of €56 million) is expected to be usable within a reasonable period. The decline in usable tax loss and interest carryforwards mainly resulted from the measurement of loss carryforwards in the United States. Deferred tax assets of €481 million (2020: €494 million) were recognized for the amount of tax loss and interest carryforwards expected to be usable.

The use of €8,158 million of tax loss and interest carryforwards, including interest carryforwards of €954 million (2020: €4,393 million, including interest carryforwards of €289 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 €766 million (2020: €658 million) would additionally have been recognized.

Tax credits of €636 million (2020: €409 million) were recognized as deferred tax assets in 2021. The use of €410 million (2020: €524 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, 2020	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021
Within one year	1	1	67	96
Within two years to five years	13	3	297	211
Thereafter	510	406	4,029	7,851
Total	**524**	**410**	**4,393**	**8,158**

2020 figures restated

The use of €5,877 million (2020: €4,561 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 €1,442 million (2020: €1,124 million) would have been recognized.

In 2021, subsidiaries that reported losses for 2021 or 2020 recognized net deferred tax assets totaling €1,342 million (2020: €1,211 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 €72 million were recognized in 2021 (2020: €54 million) for planned dividend payments by subsidiaries. Deferred tax liabilities were not recognized for differences on €26,038 million (2020: €17,477 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 (2021: –€669 million; 2020: –€2,553 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

	2020		2021	
	€ million	%	€ million	%
Expected income tax (income) and expense[1] and expected tax rate	**(4,242)**	**24.6**	**355**	**17.4**
Tax reduction from tax-free income	(133)	0.8	(186)	(9.1)
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	(89)	0.5	(21)	(1.0)
Increase in taxes due to non-tax-deductible expenses related to the operating business	174	(1.0)	171	8.3
Tax expense for expected unrecoverable temporary diffences, tax loss and interest carryforwards	1,818	(10.5)	683	33.4
Tax (income) and expenses relating to other periods	30	(0.2)	133	6.5
Tax effects of changes in tax rates	7	–	(35)	(1.7)
Other tax effects	746	(4.4)	(76)	(3.7)
Actual income tax (income) and expense and effective tax rate	**(1,689)**	**9.8**	**1,024**	**50.1**

[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 €683 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.

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 2021 amounted to €0 million (2020: €447 million).

12. Income/losses attributable to noncontrolling interest

Income attributable to noncontrolling interest amounted to €22 million (2020: €8 million). Losses attributable to noncontrolling interest amounted to €0 million (2020: €0 million). The income primarily related to Bayer CropScience 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 2020 and 2021 reporting periods, diluted earnings per share were equivalent to basic earnings per share.

B 13/1

Earnings per Share

	€ million		Earnings per share (€)	
	2020	**2021**	**2020**	**2021**
Income after income taxes (attributable to Bayer AG stockholders)	**(10,495)**	**1,000**	**(10.68)**	**1.02**
of which income after income taxes from continuing operations (attributable to Bayer AG stockholders)	(15,569)	1,000	(15.85)	1.02
of which income after income taxes from discontinued operations (attributable to Bayer AG stockholders)	5,074	–	5.17	–
Weighted average number of shares (million)	**982.42**	**982.42**		

Notes to the Statements of Financial Position

14. Goodwill and other intangible assets

Changes in intangible assets in 2021 were as follows:

B 14/1

Changes in Intangible Assets

€ 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, 2020	**40,088**	**29,596**	**12,848**	**3,508**	**1,725**	**5,646**	**3,035**	**96,446**
Acquisitions	1,448	55	6	–	–	43	–	1,552
Capital expenditures	–	99	–	83	–	103	507	792
Retirements	–	(157)	(35)	(49)	–	(34)	(38)	(313)
Transfers	–	571	–	1	–	(571)	(1)	–
Transfers (IFRS 5)	–	–	(75)	–	–	–	–	(75)
Divestments/changes in scope of consolidation	(4)	–	–	–	–	–	1	(3)
Inflation adjustment (IAS 29)	52	3	–	1	–	–	3	59
Exchange differences	2,444	1,482	618	117	3	343	104	5,111
December 31, 2021	**44,028**	**31,649**	**13,362**	**3,661**	**1,728**	**5,530**	**3,611**	**103,569**
Accumulated amortization and impairment, December 31, 2020	**3,670**	**17,778**	**6,491**	**1,983**	**1,680**	**1,292**	**1,710**	**34,604**
Retirements	–	(155)	(34)	(48)	–	(33)	(26)	(296)
Amortization and impairment losses	–	2,019	631	179	7	309	379	3,524
Amortization	–	1,292	375	149	7	–	360	2,183
Impairment losses	–	727	256	30	–	309	19	1,341
Impairment loss reversals	–	(1,293)	(466)	(39)	–	(284)	–	(2,082)
Transfers	–	149	–	–	–	(149)	–	–
Transfers (IFRS 5)	–	–	(27)	–	–	–	–	(27)
Divestments/changes in scope of consolidation	(4)	–	–	–	–	–	(2)	(6)
Inflation adjustment (IAS 29)	47	3	–	1	–	–	3	54
Exchange differences	209	722	279	79	2	95	48	1,434
December 31, 2021	**3,922**	**19,223**	**6,874**	**2,155**	**1,689**	**1,230**	**2,112**	**37,205**
Carrying amounts, December 31, 2021	**40,106**	**12,426**	**6,488**	**1,506**	**39**	**4,300**	**1,499**	**66,364**
Carrying amounts, December 31, 2020	**36,418**	**11,818**	**6,357**	**1,525**	**45**	**4,354**	**1,325**	**61,842**

2020 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.

Unscheduled impairment testing was performed in the second quarter of 2021 due to the details of the accelerated transformation program for central administrative functions becoming more concrete and the allocation to provisions for restructuring made in this connection, as well as updated corporate planning.

The impairment testing did not give rise to any material impairment losses or impairment loss reversals in the Pharmaceutical and Consumer Health segments.

Within the Crop Science segment, it resulted in the recognition of net impairment losses of €437 million on intangible assets. These concerned the cash-generating unit Corn Seed & Traits, with an impairment loss of €818 million (comprising €155 million on R&D projects, €526 million on patents and technologies, €117 million on brands and €20 million on marketing and distribution rights). The impairment loss was primarily attributable to changes in carrying amounts due to exchange rate fluctuations and an increase in the weighted average cost of capital at the end of the second quarter. In addition, an impairment loss reversal of €381 million was recognized for the glyphosate cash-generating unit (comprising €135 million on patents and technologies, and €246 million on brands), mainly due to improved business prospects. The impairment losses and impairment loss reversals on the assets of the cash-generating units were allocated to the cost of goods sold, selling expenses, and research and development expenses.

Unscheduled impairment testing was conducted in the Pharmaceuticals segment in the third quarter of 2021 due to the details of the division's transformation program becoming more concrete. Allocations were made to provisions for restructuring in this connection, and the impact on corporate planning was taken into account in the impairment testing. The impairment testing did not give rise to any impairment losses or impairment loss reversals.

Our regular annual impairment testing in the fourth quarter of 2021 resulted in the recognition of impairment loss reversals in the Crop Science segment that pertained to the cash-generating units Corn Seed & Traits (€1,099 million, comprising €215 million on research and development projects, €697 million on patents and technologies, €160 million on brands and €27 million on marketing and distribution rights) and Soybean Seed & Traits (€602 million, comprising €69 million on research and development projects, €461 million on patents and technologies, €60 million on brands and €12 million on marketing and distribution rights). These impairment loss reversals were mainly attributable to improved business prospects, which stood against an increase in the weighted average cost of capital and changes in carrying amounts due to exchange rate fluctuations.

In addition, we recognized impairment losses in the cash-generating unit glyphosate (€215 million, comprising €76 million on patents and technologies and €139 million on brands) and in the canola business (€198 million, comprising €74 million on patents and technologies and €124 million on brands). The impairment losses primarily pertained to an increase in the weighted average cost of capital at the end of the fourth quarter.

The impairment losses and loss reversals were included in the cost of goods sold, selling costs, and research and development expenses, with the respective figures determined on the basis of fair value less costs of disposal.

The table below indicates the capital cost factors used in the regular impairment testing on the cash-generating units of the Crop Science segment in the fourth quarters of 2020 and 2021.

B 14/2

Impairment Testing Parameters

	After-tax cost of capital	
%	**Q4 2020**	**Q4 2021**
Corn Seed & Traits	7.4	8.5
Soybean Seed & Traits	7.0	8.1
Glyphosate	8.0	9.0
Dicamba	5.7	6.6
Cotton	6.0	6.8
Canola	5.7	7.1
Vegetable Seeds	8.9	8.5

The impairment testing did not give rise to any material impairment losses or impairment loss reversals in the Pharmaceuticals and Consumer Health segments.

Changes in intangible assets in 2020 were as follows:

B 14/3

Changes in Intangible Assets (Previous Year)

€ 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	2,270	251	110	1	–	209	271	3,112
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	(3,057)	(1,590)	(638)	(157)	(5)	(411)	(123)	(5,981)
December 31, 2020	**40,088**	**29,596**	**12,848**	**3,508**	**1,725**	**5,646**	**3,035**	**96,446**
Accumulated amortization and impairment, 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	**36,418**	**11,818**	**6,357**	**1,525**	**45**	**4,354**	**1,325**	**61,842**
Carrying amounts, December 31, 2019	**39,312**	**18,101**	**8,102**	**2,091**	**58**	**5,491**	**866**	**74,021**

2020 figures restated

The growth rates and cost of capital factors used in the impairment testing of goodwill in 2020 and 2021 are shown in the following table:

Impairment Testing Parameters

	Growth rate		After-tax cost of capital	
%	**2020**	**2021**	**2020**	**2021**
Crop Science	2.0	2.0	7.8	8.7
Pharmaceuticals	0.0	0.0	5.3	5.1
Consumer Health	1.0	1.0	6.3	6.3

Testing goodwill for impairment involves calculating the fair value less costs to sell. In 2020, impairment losses of €2,238 million 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. In 2021, it also showed that no impairment loss would need to be recognized for the Crop Science segment 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. The prior-year analysis showed that 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)	
	2020	**2021**	**2020**	**2021**
Crop Science	22,911	24,524	3,079	2,982
Pharmaceuticals	9,575	11,441	1,262	1,303
Consumer Health	3,932	4,141	13	15

2020 figures restated

Research and development projects not yet available for use were included in unamortized intangible assets at a total amount of €4,300 million as of the end of 2021 (2020: €4,353 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 (2020: €108 million).

15. Property, plant and equipment

Changes in property, plant and equipment in 2021 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, 2020	**9,083**	**9,841**	**2,147**	**2,575**	**23,646**
Acquisitions	11	–	7	–	18
Capital expenditures	334	288	257	1,333	2,212
Retirements	(263)	(241)	(97)	(4)	(605)
Transfers	290	534	76	(900)	–
Transfers (IFRS 5)	(22)	(11)	–	(7)	(40)
Divestments/changes in the scope of consolidation	31	(5)	2	2	30
Inflation adjustment (IAS 29)	38	39	8	4	89
Exchange differences	325	307	83	123	838
December 31, 2021	**9,827**	**10,752**	**2,483**	**3,126**	**26,188**
Accumulated depreciation and impairments, December 31, 2020	**3,933**	**6,046**	**1,400**	**544**	**11,923**
Retirements	(164)	(196)	(51)	2	(409)
Depreciation and impairment losses	497	723	300	78	1,598
Depreciation	483	711	298	–	1,492
Impairment losses	14	12	2	78	106
Impairment loss reversals	(32)	(7)	(2)	(8)	(49)
Transfers	–	(4)	4	–	–
Transfers (IFRS 5)	(13)	(10)	1	–	(22)
Divestments/changes in the scope of consolidation	30	3	–	–	33
Inflation adjustment (IAS 29)	17	31	7	–	55
Exchange differences	108	165	52	46	371
December 31, 2021	**4,376**	**6,751**	**1,711**	**662**	**13,500**
Carrying amounts, December 31, 2021	**5,451**	**4,001**	**772**	**2,464**	**12,688**
Carrying amounts, December 31, 2020	**5,150**	**3,795**	**747**	**2,031**	**11,723**

2020 figures restated

Impairment losses on property, plant and equipment amounted to €106 million (2020: €174 million). This figure mainly included impairment losses of €48 million in the Pharmaceuticals segment, which primarily comprised impairment losses that arose in connection with the CureVac collaboration.

In 2021, borrowing costs of €30 million (2020: €34 million) were capitalized as components of the cost of acquisition or construction of qualifying assets, applying an average interest rate of 2.6% (2020: 3.1%).

Right-of-use assets totaling €1,145 million (2020: €1,100 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 2020 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, 2019	**9,367**	**10,228**	**2,087**	**2,698**	**24,380**
Acquisitions	42	1	17	7	67
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)	0	(33)
Inflation adjustment (IAS 29)	23	27	6	2	58
Exchange differences	(581)	(589)	(153)	(167)	(1,490)
December 31, 2020	**9,083**	**9,841**	**2,147**	**2,575**	**23,646**
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)	9	21	6	–	36
Exchange differences	(178)	(286)	(89)	(51)	(604)
December 31, 2020	**3,933**	**6,046**	**1,400**	**544**	**11,923**
Carrying amounts, December 31, 2020	**5,150**	**3,795**	**747**	**2,031**	**11,723**
Carrying amounts, December 31, 2019	**5,599**	**4,208**	**703**	**1,969**	**12,479**

2020 figures restated

Investment property

The total carrying amount of investment property as of December 31, 2021, was €136 million (December 31, 2020: €141 million). The fair value of this property was €700 million (2020: €623 million). The rental income from investment property was €38 million (2020: €14 million), and the operating expenses directly allocable to this property amounted to €6 million (2020: €3 million).

16. Investments accounted for using the equity method

Thirty-three (2020: 21) associates and six (2020: six) 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/shareownership2021.

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	**2020**	**2021**	**2020**	**2021**
Income after income taxes	(133)	(293)	(28)	(42)
Other comprehensive income after income taxes	(13)	64	–	–
Total comprehensive income after income taxes	(146)	(229)	(28)	(42)
Share of income after income taxes[1]	**(76)**	**70**	**(20)**	**(21)**
Share of total comprehensive income after income taxes	(86)	121	(20)	(21)
Carrying amount as of December 31	**345**	**496**	**146**	**133**

[1] Also including gains from remeasurement of investments accounted for using the equity method due to the loss of significant influence and the fact that they then ceased being accounted for using the equity method

17. Other financial assets

The other financial assets were comprised as follows:

B 17/1

Other Financial Assets

	Dec. 31, 2020		Dec. 31, 2021	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
AC[1]	1,414	1,256	731	571
FVTPL[1]	7,386	6,381	3,923	2,506
of which debt instruments	6,856	5,851	3,714	2,474
of which equity instruments	530	530	209	32
FVTOCI[1]	399	55	504	98
of which equity instruments (no recycling)	399	55	504	98
Receivables from derivatives	294	247	181	162
Receivables under lease agreements	2	1	29	5
Total	**9,495**	**7,940**	**5,368**	**3,342**

[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 €552 million (2020: €1,200 million) in bank deposits. No material impairment losses were recognized for expected credit losses in 2021 or 2020.

The debt instruments in the FVTPL category included capital of €644 million (2020: €653 million) provided to Bayer-Pensionskasse VVaG (Bayer-Pensionskasse) for its effective initial fund, and jouissance right capital (Genussrechtskapital) of €153 million (2020: €156 million), also provided to Bayer-Pensionskasse. Also reported in this category were investments of €2,473 million (2020: €5,663 million) in money market funds.

The equity instruments in the FVTPL category mainly comprised the €177 million interest in Century Therapeutics, Inc., United States, and the €27 million interest in Pyxis Oncology Inc., United States. In the previous year, the equity instruments in this category included the €273 million interest in Covestro AG,

Germany, and the €257 million interest in Elanco Animal Health Inc, United States. The Bayer Group sold its remaining shares in Covestro AG and Elanco Animal Health Inc. during the first half of 2021.

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, 2020	Fair value as of Dec. 31, 2021
Recursion Pharmaceuticals Inc., U.S.A.	42	98
Innovative Seed Solutions LLC, U.S.A.	38	42
AMR Action Fund L.P., U.S.A.	38	41
Huma Therapeutics Ltd., U.K.	13	41
Flagship Ventures Fund V, L.P., U.S.A.	30	36
Matys Healthy Products LLC, U.S.A.	18	19
Hokusan Co. Ltd., Japan	12	12
Arvinas Inc., U.S.A.	55	–
Other investments	153	215
Total	**399**	**504**

No material dividends were received in 2021 or 2020.

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, 2020	Dec. 31, 2021
Raw materials and supplies	1,839	2,011
Work in process, finished goods and goods purchased for resale	9,023	9,164
Rights of return	92	95
Advance payments	7	44
Total	**10,961**	**11,314**

2020 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	2020	2021
Accumulated impairment losses, January 1	**(138)**	**(100)**
Impairment losses in the reporting period	(72)	(73)
Impairment loss reversals or utilization	87	37
Exchange differences	23	–
Accumulated impairment losses, December 31	**(100)**	**(136)**

2020 figures restated

The cost of goods sold included acquisition and production costs of inventories amounting to €13,102 million (2020: €12,581 million) that were recognized as expenses.

19. Trade accounts receivable

Trade accounts receivable less impairment losses amounted to €10,047 million (2020: €9,552 million) on the closing date and pertained to the following regions and countries:

B 19/1

Trade Accounts Receivable

€ million	2020	2021
North America	2,851	2,727
of which U.S.A.	2,666	2,564
Europe/Middle East/Africa	2,979	3,456
of which Germany	714	1,148
Asia/Pacific	1,878	2,080
Latin America	2,465	2,438
of which Brazil	1,295	1,282
Trade accounts receivable (before impairments)	**10,173**	**10,701**
Accumulated impairment losses	(621)	(654)
Carrying amount, December 31	9,552	10,047
of which noncurrent	345	277

2020 figures restated

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 Bayer Group 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 €226 million (2020: €214 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, 2020	**11,517**	**842**	**12,359**
Changes resulting from trade accounts receivables recognized, derecognized or written off in the reporting period	(1,729)	(283)	(2,012)
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	**9,210**	**526**	**9,736**
Changes resulting from trade accounts receivables recognized, derecognized or written off in the reporting period	202	218	420
Transfer to credit-impaired trade accounts receivable	(33)	33	–
Transfer from credit-impaired trade accounts receivable	38	(38)	–
Write-offs	–	(35)	(35)
Other changes:			
from exchange differences	189	7	196
Gross carrying amounts as of December 31, 2021	**9,606**	**711**	**10,317**

2020 figures restated
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, 2020	**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**
Changes resulting from loss allowances newly recognized or derecognized in the reporting period and additions/reductions to existing loss allowances	(159)	219	60
Transfer from loss allowances for credit-impaired trade accounts receivable	1	(1)	–
Write-offs	–	(35)	(35)
Other changes:			–
from exchange differences	3	5	8
Loss allowances as of December 31, 2021	**98**	**556**	**654**

Only including receivables covered by the impairment model

The expected loss rates were as follows:

B19/4

Trade Accounts Receivables – Expected Loss Rates

	Expected loss rates				Credit-impaired	2021 total
€ million	0 to 1 %	> 1 to 5 %	> 5 to 10 %	> 10 %		
Gross carrying amount	7,255	2,060	261	30	711	**10,317**
Loss allowance provision	30	45	16	7	556	**654**

Only including receivables covered by the impairment model

B19/5

Trade Accounts Receivables – Expected Loss Rates (Previous Year)

	Expected loss rates				Credit-impaired	2020 total
€ million	0 to 1 %	> 1 to 5 %	> 5 to 10 %	> 10 %		
Gross carrying amount	7,173	1,579	126	332	526	**9,736**
Loss allowance provision	203	20	10	20	368	**621**

2020 figures restated
Only including receivables covered by the impairment model

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 (2020: €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 (2020: €500 million).

A further €802 million (2020: €735 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, 2020		Dec. 31, 2021	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Other tax receivables	869	837	891	883
Deferred charges	343	314	319	307
Net defined benefit asset	306	–	800	–
Assets related to other long-term employee benefits	153	–	209	–
Company-owned life insurance (“COLI”)	87	–	95	–
Receivables from employees	43	43	44	42
Reimbursement claims	39	33	126	119
Miscellaneous receivables	680	458	601	358
Total	**2,520**	**1,685**	**3,085**	**1,709**

2020 figures restated

Other receivables are stated net of impairment losses of €3 million (2020: €3 million).

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 Baa2 / 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.

In addition to utilizing cash inflows from our operational business to reduce net financial debt, we are implementing our financial strategy by way of vehicles such as subordinated hybrid bonds and a potential share buyback program.

The individual equity components and the changes therein during 2020 and 2021 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, 2021, amounted to €2,515 million (2020: €2,515 million), divided into 982,424,082 (2020: 982,424,082) registered no-par shares, and was fully paid in. Each no-par share confers one voting right.

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, and the revaluation surplus.

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 €2.00 per share for 2020. The proposed dividend for the 2021 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 noncontrolling interest

The changes in noncontrolling interest in equity during 2020 and 2021 are shown in the following table:

B 21/1

Changes in Noncontrolling Interest in Equity

€ million	2020	2021
January 1	**180**	**152**
Changes in equity not recognized in profit or loss		
Exchange differences on translation of operations outside the eurozone	(27)	13
Other changes in equity	8	(9)
Dividend payments	(17)	(30)
Income after income taxes	**8**	**22**
December 31	**152**	**148**

2020 figures restated

As of December 31, 2021, 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, 2021 (December 31, 2020: 28.6%). The equity attributable to noncontrolling interest as of December 31, 2021, amounted to €145 million (2020: €134 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, 2020	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021	Dec. 31, 2020	Dec. 31, 2021
Provisions for pensions and other post-employment benefits (net liability)	**8,271**	**7,071**	**183**	**104**	**8,454**	**7,175**
of which Germany	7,181	6,082	–	–	7,181	6,082
of which other countries	1,090	989	183	104	1,273	1,093
Assets arising from overfunded pension plans (net asset)	**296**	**798**	**10**	**2**	**306**	**800**
of which Germany	21	20	–	–	21	20
of which other countries	275	778	10	2	285	780
Net defined benefit liability	**7,975**	**6,273**	**173**	**102**	**8,148**	**6,375**
of which Germany	7,160	6,062	–	–	7,160	6,062
of which other countries	815	211	173	102	988	313

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	2020	2021	2020	2021	2020	2021	2020	2021
Current service cost	374	269	132	123	506	392	16	14
Past service cost	3	4	(5)	(24)	(2)	(20)	(1)	(8)
of which plan curtailments	–	–	(3)	(14)	(3)	(14)	(4)	–
Plan settlements	–	–	(1)	(2)	(1)	(2)	1	1
Plan administration cost paid out of plan assets	2	2	6	8	8	10	–	–
Net interest	68	62	19	12	87	74	9	7
Total	**447**	**337**	**151**	**117**	**598**	**454**	**25**	**14**

In addition, a total of €1,593 million (2020: minus €125 million) in effects of remeasurements of the net defined benefit liability was recognized in 2021 outside profit or loss. Of this amount, €1,539 million (2020: minus €144 million) related to pension obligations, €60 million (2020: €11 million) to other post-employment benefit obligations, and minus €6 million (2020: €8 million) to the effects of the asset ceiling. Plan curtailments of minus €14 million were made in 2021 (2020: minus €7 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, 2021	**(17,966)**	**10,806**	**–**	**(7,160)**
Acquisitions	–	–	–	–
Divestments/changes in the scope of consolidation	–	–	–	–
Current service cost	(269)			(269)
Past service cost	(4)			(4)
Net interest	(159)	97	–	(62)
Net actuarial gain/(loss)	433			433
of which due to changes in financial parameters	550			550
of which due to changes in demographic parameters	–			–
of which experience adjustments	(117)			(117)
Return on plan assets excluding amounts recognized as interest income		517		517
Employer contributions		100		100
Employee contributions	(67)	30		(37)
Payments due to plan settlements	–	–		
Benefits paid out of plan assets	177	(177)		
Benefits paid by the company	422			422
Plan administration cost paid from plan assets		(2)		(2)
December 31, 2021	**(17,433)**	**11,371**	**–**	**(6,062)**
Other countries				
January 1, 2021	**(9,311)**	**8,333**	**(10)**	**(988)**
Acquisitions	–	–	–	–
Divestments/changes in the scope of consolidation	–	–	–	–
Current service cost	(137)			(137)
Past service cost	32			32
Gains/(losses) from plan settlements	1			1
Net interest	(190)	172	(1)	(19)
Net actuarial gain/(loss)	326			326
of which due to changes in financial parameters	352			352
of which due to changes in demographic parameters	31			31
of which due to experience adjustments	(57)			(57)
Return on plan assets excluding amounts recognized as interest income		323		323
Remeasurement of asset ceiling			(6)	(6)
Employer contributions		71		71
Employee contributions	(18)	18		–
Payments due to plan settlements	449	(449)		–
Benefits paid out of plan assets	357	(357)		–
Benefits paid by the company	117			117
Plan administration costs paid out of plan assets		(8)		(8)
Exchange differences	(588)	563	–	(25)
December 31, 2021	**(8,962)**	**8,666**	**(17)**	**(313)**
of which other post-employment benefits	(661)	559	–	(102)
Total, December 31, 2021	**(26,395)**	**20,037**	**(17)**	**(6,375)**

B 22/4

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, 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 due to 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)**

The benefit obligations pertained mainly to Germany (66%; 2020: 66%), the United States (18%; 2020: 18%) and the United Kingdom (8%; 2020: 8%). In Germany, current employees accounted for about 37% (2020: 39%), retirees or their surviving dependents for about 53% (2020: 51%) and former employees with vested pension rights for about 10% (2020: 10%) of entitlements under defined benefit plans. In the United States, current employees accounted for about 27% (2020: 26%), retirees or their surviving dependents for about 56% (2020: 51%) and former employees with vested pension rights for about 17% (2020: 23%) 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 €1,081 million (2020: €1,401 million) and €28 million (2020: €61 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	**2020**	**2021**	**2020**	**2021**	**2020**	**2021**
Defined benefit obligation	**26,595**	**25,734**	**682**	**661**	**27,277**	**26,395**
of which unfunded	644	674	126	210	770	884
of which funded	25,951	25,060	556	451	26,507	25,511
Funded status of funded obligations						
Overfunding	281	825	1	114	282	939
Underfunding	7,612	6,408	47	5	7,659	6,413

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), 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 defined-benefit, 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, Germany. Future pension payments from this defined-benefit, multi-employer 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), Germany. This covers further retirement provision arrangements of the Bayer Group, such as deferred compensation, pension obligations previously administered by Schering Altersversorgung Treuhand e. V., Germany, 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. In October 2021, both the Bayer Corporation Pension Plan and Monsanto Company Pension Plan were changed, with certain defined benefit obligations being transferred to a major U.S. insurer. In return, the external pension provider was paid consideration of approximately US$485 million out of plan assets. The remeasurement increased the financial result for the remainder of the year through December 31, 2021, by around US$1.2 million. The insurer has assumed all legal and de facto obligations for the benefits transferred and will be responsible for the payment thereof with effect from January 1, 2022.

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 healthcare 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	2020	2021	2020	2021	2020	2021
Plan assets based on quoted prices in active markets						
Real estate and special real estate funds	–	–	282	330	9	13
Equities and equity funds	2,916	3,182	2,011	1,862	114	122
Callable debt instruments	–	–	71	62	–	–
Noncallable debt instruments	–	–	2,961	3,195	329	380
Bond funds	4,868	4,705	1,673	1,767	20	–
Derivatives	3	–	2	9	–	–
Cash and cash equivalents	491	805	21	54	4	9
Other	–	–	–	7	–	–
	8,278	**8,692**	**7,021**	**7,286**	**476**	**524**
Plan assets for which quoted prices in active markets are not available						
Real estate and special real estate funds	471	516	175	195	–	–
Equities and equity funds	176	309	81	69	–	–
Callable debt instruments	739	792	4	5	–	–
Noncallable debt instruments	1,020	918	–	–	–	–
Bond funds	–	–	115	138	–	–
Derivatives	–	–	–	–	–	–
Cash and cash equivalents	–	–	–	–	–	–
Other	122	144	428	414	33	35
	2,528	**2,679**	**803**	**821**	**33**	**35**
Total plan assets	**10,806**	**11,371**	**7,824**	**8,107**	**509**	**559**

Plan assets included assets with a carrying amount of €3,535 million (2020: €3,364 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 €62 million (2020: €77 million), and Bayer AG shares and bonds held through investment funds, recognized at their fair values of €14 million (2020: €24 million) and €12 million (2020: €17 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	
%	2020	2021	2020	2021	2020	2021
Pension obligations						
Discount rate	0.90	1.20	1.95	2.30	1.25	1.55
of which U.S.A.			2.50	2.80	2.50	2.80
of which U.K.			1.30	1.80	1.30	1.80
Projected future salary increases	2.25	2.25	3.10	3.30	2.50	2.60
Projected future benefit increases	1.60	1.80	2.60	3.00	1.90	2.20
Other post-employment benefit obligations						
Discount rate	–	–	3.05	3.50	3.05	3.50

In Germany the Heubeck RT 2018 G mortality tables were used, in the United States the MP-2021 Mortality Tables, and in the United Kingdom 100% of S3NMA and 101% of S3NFA.

The multi-stage process of determining pension trend assumptions in Germany was modified as of December 31, 2021. The recalculated pension trend assumption of 1.8% takes into account the increase in long-term inflation expectations in the eurozone but without factoring in short-term inflation factors that are yet to be classifed as longer term. Applying the previous methodology and including such factors would have yielded a figure of 2.20%. Had that parameter been applied, the obligations would have been approximately €0.7 billion higher.

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 2021 as follows:

B 22/8

Sensitivity of Benefit Obligations

	Germany		Other countries		Total	
€ million	**Increase**	**Decrease**	**Increase**	**Decrease**	**Increase**	**Decrease**
Pension obligations						
0.5%-pt. change in discount rate	(1,382)	1,580	(512)	571	(1,894)	2,151
0.5%-pt. change in projected future salary increases	29	(27)	60	(57)	89	(84)
0.5%-pt. change in projected future benefit increases	915	(832)	144	(103)	1,059	(935)
10% change in mortality	(1,056)	1,057	(248)	268	(1,304)	1,325
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(31)	34	(31)	34
10% change in mortality	–	–	(19)	22	(19)	22

B 22/9

Sensitivity of Benefit Obligations (Previous Year)

	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

Provisions are also established for the obligations, mainly of U.S. subsidiaries, to provide post-employment benefits in the form of healthcare cost payments for retirees. The valuation of healthcare costs was based on the assumption that they will increase at a rate of 6.5% (2020: 6.8%). It was assumed that this rate of increase will gradually decline to 5.0% (2020: 5.0%) by 2028 (2020: 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 22/10

Sensitivity to Healthcare Cost Increases

	Increase of 1%-pt.		Decrease of 1%-pt.	
€ million	**2020**	**2021**	**2020**	**2021**
Impact on other post-employment benefit obligations	45	39	(38)	(33)
Impact on benefit expense	2	2	(1)	(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 22/11

Employer Contributions Paid or Expected

	Germany			Other countries		
€ million	**2020**	**2021**	**2022 expected**	**2020**	**2021**	**2022 expected**
Pension obligations	20	100	100	91	88	48
Other post-employment benefit obligations	–	–	–	(16)	(17)	2
Total	**20**	**100**	**100**	**75**	**71**	**50**

Bayer has been committed to making deficit contributions for its U.K. pension plans of approximately GBP27 million annually, although this fixed commitment ceases to apply from 2022. For its U.S. pension plans, Bayer did not make any deficit contributions in 2021 or in 2020, and expects to make zero or only very low regular payments in 2022 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 22/12

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**
2022	186	388	22	596	455	91	24	570
2023	187	384	21	592	458	95	23	576
2024	187	396	22	605	460	95	24	579
2025	188	398	22	608	454	98	24	576
2026	188	402	22	612	464	105	23	592
2027–2031	958	2,064	109	3,131	2,310	583	117	3,010

The weighted average term of the pension obligations is 17.1 years (2020: 17.7 years) in Germany and 13.4 years (2020: 13.4 years) in other countries. The weighted average term of the obligations for other post-employment benefits in other countries is 10.7 years (2020: 10.9 years).

23. Other provisions

Changes in the various provision categories in 2021 were as follows:

B 23/1

Changes in Other Provisions

€ million	Other taxes	Environmental protection	Restructuring	Trade-related commitments	Litigations	Personnel commitments	Miscellaneous	Total
January 1, 2021	**55**	**630**	**1,021**	**343**	**9,300**	**1,911**	**1,092**	**14,352**
Divestments	–	–	–	–	–	(3)	–	(3)
Changes in scope of consolidation	1	–	–	–	–	1	–	2
Additions	19	104	860	332	3,789	3,135	393	8,632
Utilization	(18)	(41)	(383)	(311)	(4,725)	(1,444)	(303)	(7,225)
Reversal	(21)	(47)	(89)	(7)	(88)	(435)	(389)	(1,076)
Interest cost	–	8	–	–	29	(2)	(14)	21
Exchange differences	–	47	6	16	734	77	16	896
December 31, 2021	**36**	**701**	**1,415**	**373**	**9,039**	**3,240**	**795**	**15,599**
of which current	9	65	414	363	3,410	2,308	254	6,823

2020 figures restated

The provisions were partly offset by reimbursement claims in the amount of €30 million (2020: €31 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 €1,362 million (2020: €980 million) for severance payments and €53 million (2020: €41 million) for other restructuring expenses, which mainly comprised other costs related to the outsourcing of research activities and the closure of production facilities. The breakdown of provisions by segment was as follows: €249 million (2020: €227 million) at Crop Science, €508 million (2020: €181 million) at Pharmaceuticals, €24 million (2020: €21 million) at Consumer Health and €634 million (2020: €592 million) in Enabling Functions / All Other Segments.

At the end of 2018, Bayer announced a comprehensive restructuring program for the entire Group to strengthen the company's core business and considerably increase productivity and earning power by 2022. In September 2020, Bayer announced plans to achieve further operational savings in order to advance the company in the market environment and accelerate its transformation. To this end, specific communication measures for impacted employees and employee representatives took place for the first time in 2021, which meant provisions had to be established under IAS 37.

The new transformation program in the Crop Science segment involves the implementation of the long-term strategy along with the necessary organisational measures. In this connection, allocations were made to provisions to support the drive toward a customer-centric, outcome-based and digitally enabled approach. At the same time, the provisions established in the previous years for organizational restructuring in the wake of the Monsanto integration continued to be utilized, although a portion of these provisions was reversed due to modified assumptions.

Provisions were also established in the Pharmaceuticals segment in the second half of the year in connection with a newly launched transformation program. This program is aimed at driving a fundamental organizational transformation through 2025, in step with the long-term strategy and Bayer's mission as a leading science company to deliver groundbreaking innovation. The existing provisions for ongoing programs continued to be utilized.

Initial provisions were also established in the Consumer Health segment in conjunction with a new transformation initiative that aims to make Bayer the best consumer health company and empower the transformation of everyday health. The existing provisions for the program's predecessor, "Fit to Win", continued to be utilized.

Additions were also made to the provisions established under Enabling Functions and Consolidation, which forms part of the Reconciliation within the segment reporting, for the personnel adjustment measures announced in September 2020. These measures are geared toward achieving further savings in the enabling functions. The provisions established in the previous years for the restructuring program communicated in late 2018 continued to be utilized.

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, Aspire 3.0 and BayShare 2021 collectively to different groups of employees. The Aspire 2.0 and Aspire 3.0 programs are accounted for in accordance with the requirements of IFRS 2 concerning cash-settled share-based payment transactions. By contrast, the BayShare stock-based compensation program is accounted for in line with the requirements of IFRS 2 concerning equity-settled share-based payment transactions. Provisions are established for all awards to be made under the Aspire 2.0 and Aspire 3.0 programs. 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 and Aspire 3.0:

B 23/2

Changes in Provisions

€ million	Aspire
January 1, 2021	**454**
Additions	447
Utilization	(137)
Reversal	(214)
Exchange differences	29
December 31, 2021	**579**

The value of the Aspire 2.0 tranche that was fully earned at the end of 2021, resulting in payments at the beginning of 2022, was €107 million (2020: €131 million).

The net expense for all stock-based compensation programs was €238 million (2020: €63 million), including €5 million (2020: €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. Detailed information on the stock-based compensation of the Board of Management can be found in the Compensation Report (www.bayer.com/cpr).

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 2022, a payment of 54% was made for the tranche issued in 2018.

Long-term incentive program Aspire 3.0

Due to the introduction of Aspire 3.0 in 2020, Bayer's long-term compensation program now includes a series of additional strategic performance indicators that are aligned toward the company's strategy. Eligibility was limited to the Board of Management in the first year of the program. However, since the beginning of 2021, it has also been offered to eligible employees below the Board of Management.

As with Aspire 2.0, the annual tranches are granted over a four-year term in the form of virtual shares. This program is also based on a percentage of each employee's annual base salary (the so-called LTI target amount), the percentage varying according to their position. The number of virtual shares is determined by dividing the LTI target amount by the price of Bayer shares at the beginning of the program. However, the individual STI payout factor is no longer taken into consideration when calculating the number of virtual shares.

The fair value of the obligations continues to be determined from the price of Bayer stock and the dividends already paid. Compared with Aspire 2.0, however, there is also an additional performance factor to be taken into account that comprises three weighted performance components: relative capital market performance (40%), return on investment (40%) and sustainability (20%). The final LTI payout is determined by multiplying the number of virtual shares by the Bayer share price at the end of the performance period and the performance factor mentioned above, and then adding an amount equivalent to the dividends paid during the performance period. The maximum payout is 250% of the LTI target amount. Detailed

information on the stock-based compensation of the Board of Management and the three performance components mentioned above can be found in the Compensation Report (www.bayer.com/cpr).

BayShare 2021

All management levels and nonmanagerial employees in Germany are offered an annual stock participation program known as BayShare, under which Bayer subsidizes their personal investments in the company's stock. On November 10, 2021, approximately 500,000 Bayer AG shares (2020: 538,000 shares) were purchased at a price of €51.41 per share (2020: €42.97 per share) for this purpose in accordance with Section 71, Paragraph 1, No. 8 of the German Stock Corporation Act. These shares corresponded to €1.3 million (2020: €1.4 million), or 0.05% (2020: 0.05%), of the capital stock. At the time of purchase, the value of the shares was €26 million (2020: €23 million). The shares were deposited in employees' securities accounts in late 2021, meaning that Bayer AG did not hold any own shares as of December 31, 2021.

The discount granted under this program in 2021 was 20% (2020: 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 (2020: €2,500) or €5,000 (2020: €5,000), depending on the employee's position. The shares purchased must be retained until December 31, 2022.

Other

Miscellaneous provisions include those for interest payments on income taxes and other taxes, as well as those for other liabilities, 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, 2020		Dec. 31, 2021	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Bonds and notes	36,745	4,494	37,593	2,045
Liabilities to banks	3,669	3,653	773	772
Lease liabilities	1,143	212	1,165	236
Liabilities from derivatives	136	136	69	69
Other financial liabilities	77	74	1,272	1,269
Total	**41,770**	**8,569**	**40,872**	**4,391**

2020 figures restated

A breakdown of financial liabilities by contractual maturity is given below:

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Maturities of Financial Liabilities

€ million	Dec. 31, 2020	€ million	Dec. 31, 2021
2021	8,569	2022	4,391
2022	2,236	2023	3,818
2023	3,513	2024	3,850
2024	3,632	2025	4,076
2025	2,659	2026	1,826
2026 or later	21,161	2027 or later	22,911
Total	**41,770**	**Total**	**40,872**

2020 figures restated

The Bayer Group has issued the following bonds and notes:

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Bonds and Notes

	Nominal volume as of Dec. 31, 2020	Carrying amount as of Dec. 31, 2020 (€ million)	Nominal volume as of Dec. 31, 2021	Carrying amount as of Dec. 31, 2021 (€ million)
Hybrid bonds[1]				
Hybrid bond 2014/2024[2]/2074	EUR 1,500 million	1,497	EUR 1,500 million	1,498
Hybrid bond 2015/2022[2]/2075	EUR 1,300 million	1,297	EUR 1,300 million	1,299
Hybrid bond 2019/2025[2]/2079	EUR 1,000 million	991	EUR 1,000 million	993
Hybrid bond 2019/2027[2]/2079	EUR 750 million	747	EUR 750 million	747
USD bonds[1, 3]				
Maturity < 1 year	USD 4,500 million	3,665	USD 250 million	219
Maturity > 1 year < 5 years	USD 9,364 million	7,614	USD 9,114 million	8,027
Maturity > 5 years	USD 10,800 million	8,584	USD 10,800 million	9,309
EUR bonds[1, 3]				
Maturity < 1 year	EUR 750 million	750	EUR 1,750 million	1,749
Maturity > 1 year < 5 years	EUR 3,750 million	3,738	EUR 4,950 million	4,936
Maturity > 5 years	EUR 7,750 million	7,704	EUR 8,800 million	8,739
JPY bonds[1]				
Maturity < 1 year	JPY 10 billion	79	JPY 10 billion	77
Maturity > 1 year < 5 years	JPY 10 billion	79	–	–
Total		**36,745**		**37,593**

[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] Bonds with nominal volumes of US$1,250 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 as equity by three contracted rating agencies. They therefore have a more limited effect on the Group's rating-specific debt indicators than senior borrowings.

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 €4 billion in 2021. The four tranches with volumes of 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 0.05%, 0.375%, 0.625% and 1.00%, respectively.

In 2021, five bonds with a total volume of US$4.5 billion, a bond with a nominal volume of €750 million, and a bond with a nominal volume of JPY10 billion were redeemed at maturity.

In 2020, Bayer AG placed bonds with a total volume of €6 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% p.a., 0.75% p.a., 1.125% p.a. and 1.375% p.a., respectively.

Liabilities to banks

The decline in liabilities to banks was mainly due to the repayment of the outstanding amount of US$3.8 billion (€3.2 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 financial liabilities

Other financial liabilities as of December 31, 2021, included €1.2 billion in commercial paper (2020: €0 million).

Other information

A total of €4.5 billion in undrawn credit facilities remained available to the Bayer Group as of December 31, 2021 (December 31, 2020: €4.5 billion).

Further information on the accounting for liabilities from derivatives is given in Note [27].

25. Trade accounts payable

Trade accounts payable comprised €6,774 million (2020: €5,666 million) due within one year and €18 million (2020: €12 million) due after one year.

26. Other liabilities

Other liabilities comprised the following:

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Other Liabilities

	Dec. 31, 2020		Dec. 31, 2021	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Other tax liabilities	610	601	547	531
Liabilities from derivatives	281	199	293	252
Accrued interest on liabilities	240	240	253	253
Liabilities for social expenses	223	221	184	184
Liabilities to employees	154	153	156	155
Deferred income	59	36	79	39
Miscellaneous liabilities	1,819	625	2,236	681
Total	**3,386**	**2,075**	**3,748**	**2,095**

2020 figures restated

The deferred income included €18 million (2020: €21 million) in grants and subsidies received from governments, of which €4 million (2020: €3 million) was reversed through profit or loss.

Miscellaneous liabilities included liabilities of €431 million for potential future milestone payments that arose in connection with the acquisition of Vividion Therapeutics, Inc., United States, along with liabilities of €1,095 million (2020: €920 million) for potential future milestone payments in connection with the acquisition of Asklepios BioPharmaceutical, Inc., (AskBio), United States. Also reflected here are financing commitments to joint ventures amounting to €41 million (2020: €84 million).

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. It also contains more detailed information on individual market price risks.

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, 2021

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	9,663	188			196	10,047
AC	9,663					9,663
FVTPL, mandatory[2]		188				188
Nonfinancial assets					196	196
Other financial assets	760	1,856	1,391	1,361		5,368
AC	731		[731]			731
FVTPL, mandatory[2]		1,745	1,236	942		3,923
FVTOCI (no recycling), designated[3]		98		406		504
Derivatives – hedge accounting			36			36
Derivatives – no hedge accounting		13	119	13		145
Lease receivables	29		[29]			29
Other receivables	303			67	2,715	3,085
AC	303		[303]			303
FVTPL, mandatory[2]				67		67
Nonfinancial assets					2,715	2,715
Cash and cash equivalents	4,564					4,564
AC	4,564		[4,564]			4,564
Total financial assets	**15,290**	**2,044**	**1,391**	**1,428**		**20,153**
of which AC	15,261					15,261
of which FVTPL		1,933	1,236	1,009		4,178
Financial liabilities	40,708		69		95	40,872
AC	39,543	[32,202]	[9,999]			39,543
Derivatives – no hedge accounting			69			69
Lease liabilities	1,165					1,165
Nonfinancial liabilities					95	95
Trade accounts payable	6,792					6,792
AC	6,792					6,792
Other liabilities	771	31	260	1,771	915	3,748
AC	771		[771]			771
FVTPL (nonderivative), mandatory[2]				1,769		1,769
Derivatives – hedge accounting			239			239
Derivatives – no hedge accounting		31	21	2		54
Nonfinancial liabilities					915	915
Total financial liabilities	**48,271**	**31**	**329**	**1,771**		**50,402**
of which AC	47,106					47,106
of which derivatives - no hedge accounting		31	90	2		123

[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 (Previous Year)

Dec. 31, 2020

		Carried at fair value [fair value for information[4]]				
Measurement category (IFRS 9)[1]	Carried at amortized cost	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	9,117	246			189	9,552
AC	9,117					9,117
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	340			77	2,103	2,520
AC	340		[340]			340
FVTPL, mandatory[2]				77		77
Nonfinancial assets					2,103	2,103
Cash and cash equivalents	4,191					4,191
AC	4,191		[4,191]			4,191
Total financial assets	**15,064**	**3,960**	**3,078**	**1,364**		**23,466**
of which AC	15,062					15,062
of which FVTPL		3,888	2,813	1,008		7,709
Financial liabilities	41,564		136		70	41,770
AC	40,421	[34,189]	[9,822]			40,421
Derivatives – no hedge accounting			136			136
Lease liabilities	1,143					1,143
Nonfinancial liabilities					70	70
Trade accounts payable	5,678					5,678
AC	5,678					5,678
Other liabilities	859	56	224	1,262	985	3,386
AC	859		[859]			859
FVTPL (nonderivative), mandatory[2]				1,261		1,261
Derivatives – hedge accounting			208			208
Derivatives – no hedge accounting		56	16	1		73
Nonfinancial liabilities					985	985
Total financial liabilities	**48,101**	**56**	**360**	**1,262**		**49,779**
of which AC	46,958					46,958
of which derivatives – no hedge accounting		56	152	1		209

2020 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] 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 mainly 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 €15,290 million (2020: €15,064 million).

The maximum default risk from existing loan commitments that are subject to the impairment model is €1,165 million (2020: €1,165 million). In this connection, expected credit losses of €0 million (2020: €1 million) were recognized through profit or loss.

The maximum default risk from financial assets not subject to the impairment model is €4,863 million (2020: €8,402 million).

The interests in Century Therapeutics, Inc., United States, and Pyxis Oncology, Inc., United States were accounted for in the Bayer Group consolidated financial statements as associates using the equity method until June 2021 and October 2021, respectively. Their respective IPOs in June 2021 and October 2021 led to the loss of significant influence and resulted in a change in accounting method. Since then, the shares held by Bayer have been measured at fair value through profit or loss. The interests in Covestro and Elanco were also measured at fair value through profit or loss until the Bayer Group sold its remaining shares in the companies during the first half of 2021.

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 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, 2021	**1,008**	**344**	**11**	**(1,261)**	**102**
Gains (losses) recognized in profit or loss	(7)	–	(1)	(40)	(48)
of which relating to assets/liabilities held at the end of the reporting period	(7)	–	(1)	(42)	(50)
Gains (losses) recognized outside profit or loss	–	37	–	–	37
Additions of assets/(liabilities)	20	48	–	(419)	(351)
Settlements of (assets)/liabilities	(22)	–	–	68	46
Transfers to Level 1[2]	–	(42)	–	–	(42)
Changes in scope of consolidation	–	(1)	–	–	(1)
Exchange differences	10	20	1	(117)	(86)
Carrying amounts (net), December 31, 2021	**1,009**	**406**	**11**	**(1,769)**	**(343)**

[1] See table B 27.1/1 for definition of measurement categories.
[2] The transfer pertained to the interest in Recursion Pharmaceuticals Inc., United States, which is now a publicly listed company.

B 27.1/4

Development of Financial Assets and Liabilities (Level 3) (Previous Year)

€ 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 relating to assets/liabilities held at the end of the reporting period	39	–	5	(18)	26
Gains (losses) recognized outside profit or loss	–	31	–	–	31
Additions of assets/(liabilities)	3	93	–	(1,092)	(996)
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**	**(1,261)**	**102**

2020 figures restated
[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

							2021
€ 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	68	51	–	12	8	–	139
Interest expense	–	–	–	(11)	(1,136)	–	(1,147)
Income/expenses from affiliated companies	–	–	6	–	–	–	6
Changes in fair value	–	(55)	–	22	–	(40)	(73)
Impairment losses	(128)	–	–	–	–	–	(128)
Impairment loss reversals	83	–	–	–	–	–	83
Exchange gains/losses	27	–	–	145	(440)	–	(268)
Other financial income/expenses	31	–	–	–	(5)	–	26
Net result	**81**	**(4)**	**6**	**168**	**(1,573)**	**(40)**	**(1,362)**

[1] See table B 27.1/1 for definition of measurement categories.

B 27.1/6

Income, Expense, Gains and Losses on Financial Instruments (Previous Year)

€ million	Assets – AC[1]	Assets – FVTPL[1]	FVTOCI (no Recycling)[1]	Derivatives – no hedge accounting	Liabilities – AC[1]	Liabilities – FVTPL (non-derivative)[1]	2020 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	28	–	–	–	(15)	–	13
Net result	**(641)**	**615**	**2**	**(108)**	**(680)**	**(18)**	**(830)**

2020 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, Elanco and Century Therapeutics. 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 mainly 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 €129 million (2020: €245 million), and the volume with negative fair values was €308 million (2020: €331 million). Included here is an amount of €77 million (2020: €111 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 (2020: €965 million) and €200 million (2020: €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

€ million	Dec. 31, 2021 Carrying amount	2022	2023	2024	2025	2026	after 2026
		Interest and repayment					
Financial liabilities							
Bonds	37,593	2,827	4,566	4,574	4,671	2,340	28,958
Liabilities to banks	678	679	1	–	–	–	–
Remaining liabilities	2,437	1,563	280	202	150	107	436
Trade accounts payable	6,792	6,774	15	2	1	–	–
Other liabilities							
Accrued interest on liabilities	253	253	–	–	–	–	–
Remaining liabilities	2,287	830	556	337	445	216	247
Liabilities from derivatives	362	409	40	–	–	–	–
With gross settlement		233	–	–	–	–	–
Cash outflows		8,371	–	–	–	–	–
Cash inflows		(8,138)	–	–	–	–	–
With net settlement		176	40	–	–	–	–
Cash outflows		176	40	–	–	–	–
Loan commitments	–	1,165	–	–	–	–	–
Financial guarantees	–	–	–	–	–	–	1
Total	50,402	14,500	5,458	5,115	5,267	2,663	29,642

B 27.2/2

Maturity Analysis of Financial Instruments (Previous Year)

€ million	Dec. 31, 2020 Carrying amount	2021	2022	2023	2024	2025	after 2025
		Interest and repayment					
Financial liabilities							
Bonds	36,745	5,287	2,963	4,241	4,337	3,198	27,157
Liabilities to banks	3,599	3,594	6	–	–	3	8
Remaining liabilities	1,220	336	243	201	150	119	434
Trade accounts payable	5,678	5,666	9	2	1	–	–
Other liabilities							
Accrued interest on liabilities	240	240	–	–	–	–	–
Remaining liabilities	1,880	764	427	310	273	240	189
Liabilities from derivatives	417	349	41	41	–	–	–
With gross settlement		176	–	–	–	–	–
Cash outflows		13,357	–	–	–	–	–
Cash inflows		(13,181)	–	–	–	–	–
With net settlement		173	41	41	–	–	–
Cash outflows		173	41	41	–	–	–
Loan commitments	–	1,165	–	–	–	–	–
Financial guarantees	–	–	–	–	–	–	1
Total	49,779	17,401	3,689	4,795	4,761	3,560	27,789

2020 figures restated

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 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 amount of this bond as of December 31, 2021, was €2,200 million. Hedge-related fair value adjustments of €12 million increased the carrying amount to €2,212 million. 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 for seeds and energy. Most of these contracts are designated as cash flow 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 decreased in 2021 by €143 million (2020: increased by €87 million) due to changes in the fair values of derivatives. Total changes of €26 million in the fair values of derivatives were recognized as expense in 2021 (2020: €6 million recognized as income) 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 forecasted transactions	Interest-rate hedging of forecasted transactions	Commodity price hedging	Hedging of stock-based employee compensation programs	Total
January 1, 2020	**(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**
Changes in fair values	(260)	14	93	10	(143)
Reclassified to profit or loss	45	(37)	(1)	19	26
Reclassified to inventories	–	–	(89)	–	(89)
December 31, 2021	**(149)**	**147**	**34**	**(19)**	**13**

No material ineffective portions of these hedges required recognition through profit or loss in 2021 or 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

	Dec. 31, 2020			Dec. 31, 2021		
€ million	Notional amount[1]	Positive fair value	Negative fair value	Notional amount[1]	Positive fair value	Negative fair value
Currency hedging of recorded transactions[2, 3]	**16,518**	**112**	**(136)**	**11,838**	**102**	**(69)**
Forward exchange contracts	16,388	69	(136)	11,790	80	(69)
Cross-currency interest-rate swaps	130	43	–	48	22	–
Currency hedging of forecasted transactions[2, 4]	**3,965**	**107**	**(40)**	**5,009**	**23**	**(163)**
Forward exchange contracts	3,707	102	(34)	4,738	15	(163)
of which cash flow hedges	3,323	97	(32)	4,345	12	(157)
Currency options	258	5	(6)	271	8	–
of which cash flow hedges	258	5	(6)	271	8	–
Interest-rate hedging of recorded transactions[2, 3]	**608**	**29**	**–**	**441**	**12**	**–**
Interest-rate swaps	608	29	–	441	12	–
of which fair value hedges	608	29	–	441	12	–
	–	–	–	–	–	–
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]	**925**	**20**	**(50)**	**868**	**16**	**(31)**
Forward commodity contracts	917	18	(50)	860	14	(31)
of which cash flow hedges	512	3	–	640	4	(4)
Commodity option contracts	8	2	–	8	2	–
Hedging of stock-based employee compensation programs[2, 4]	**482**	**–**	**(162)**	**341**	**–**	**(78)**
Forward share transactions	482	–	(162)	341	–	(78)
of which cash flow hedges	482	–	(162)	341	–	(78)
Total	**24,598**	**268**	**(396)**	**18,497**	**153**	**(341)**
of which current derivatives	23,640	234	(314)	17,765	148	(303)
for currency hedging	20,436	203	(176)	16,846	125	(233)
for interest-rate hedging[5]	2,300	11	(8)	–	7	–
for commodity price hedging	743	20	(50)	714	16	(31)
for hedging of stock-based employee compensation programs	161	–	(80)	205	–	(39)

[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, 2020	Dec. 31, 2021
	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	6.17	6.83
EUR/CNH	8.08	7.85
EUR/JPY	122.86	130.38

28. Leases

The accounting policy options exercised with respect to leases are outlined in Note [3].

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 7.6 years (2020: 7.7 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 7.8 years (2020: 6.4 years).

Like in the previous year, 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. As in the prior year, roughly half 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:

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Right-of-Use Assets

€ million	Dec. 31, 2020	Dec. 31, 2021
Land and buildings	772	774
Investment property	5	5
Plant installations and machinery	131	126
Furniture, fixtures and other equipment	198	214
Construction in progress and advance payments	6	26
Total	**1,112**	**1,145**

2020 figures restated

Additions to right-of-use assets in 2021 amounted to €338 million (2020: €386 million).

The maturities of the outstanding lease payments were as follows:

B 28/2

Maturities of Lease Payments

€ million	Dec. 31, 2020	Dec. 31, 2021
Maturing within 1 year	262	296
Maturing in 1-5 years	711	735
Maturing after 5 years	434	436
Total	**1,407**	**1,467**

2020 figures restated

The depreciation of right-of-use assets in 2021 pertained to the following asset groups:

B 28/3

Depreciation of Right-of-Use Assets

€ million	2020	2021
Land and buildings	219	196
Plant installations and machinery	60	31
Furniture, fixtures and other equipment	107	111
Total	**386**	**338**

In addition, the following amounts were recognized in the income statement in 2021 in connection with lease contracts in which Bayer was the lessee:

B 28/4

Income Statement Impact of Leases

€ million	2020	2021
Interest expense for the unwinding of discount on lease liabilities	(64)	(53)
Expenses for short-term leases with terms longer than one month and up to 12 months	(258)	(271)
Expenses for leases with low-value underlying assets (excluding short-term leases)	(2)	(2)
Expenses for variable lease payments not included in the measurement of the lease liability	(11)	(13)
Income from subleasing of right-of-use assets	5	4
Gains or losses on sale-and-leaseback transactions	2	86
Total	**(328)**	**(249)**

Cash outflows related to lessee activities in 2021 amounted to €665 million (2020: €687 million). Unrecognized liabilities of €30 million existed as of December 31, 2021, for short-term leases that had not yet commenced (December 31, 2020: €17 million). Leases signed but not yet commenced as of December 31, 2021, (other than short-term leases) amounted to €52 million (2020: €176 million).

29. Contingent liabilities and other financial commitments

Contingent liabilities

The following warranty contracts, guarantees and other contingent liabilities existed at the end of the reporting period:

B 29/1

Contingent Liabilities

€ million	Dec. 31, 2020	Dec. 31, 2021
Warranties	122	117
Other contingent liabilities	2,764	2,955
Total	**2,886**	**3,072**

Other contingent liabilities as of December 31, 2021, amounted to approximately €2,955 million (December 31, 2020: €2,764 million) and primarily related to tax, labor or tort 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, 2020	Dec. 31, 2021
Commitments under purchase agreements for property, plant and equipment	702	1,018
Contractual obligation to acquire intangible assets	203	162
Capital contribution commitments	357	111
Unpaid portion of the effective initial fund	1,165	1,165
Potential payment obligations under collaboration agreements and contingent payments from acquisitions that do not constitute business combinations	3,703	4,237
Sales-based milestones	2,493	3,187
Total	**8,623**	**9,880**

The increase in commitments under purchase agreements for property, plant and equipment mainly pertained to payment obligations in connection with investments in the supply center in Turku, Finland.

The expected maturities of payment obligations under collaboration agreements and revenue-based milestone payment commitments are as follows:

B 29/3

Maturities of Other Financial Liabilities

	Payment obligations under collaboration agreements		Revenue-based milestone payment commitments	
€ million	2020	2021	2020	2021
Maturing within 1 year	174	327	–	952
Maturing in 1-5 years	1,039	1,124	76	47
Maturing after 5 years	2,490	2,786	2,417	2,188
Total	**3,703**	**4,237**	**2,493**	**3,187**

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 potential payment obligations arising from collaboration agreements and contingent consideration from acquisitions that do not constitute business combinations and for the attainment of sales-based milestones was largely due to a development and licensing agreement with Opsis Therapeutics, LLC, United States, and 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, including cerebral, gastrointestinal or other bleeding and death, from the use of Xarelto™, an oral anticoagulant for the treatment and prevention of blood clots. Plaintiffs claimed, among other things, that Xarelto™ is defective and that Bayer 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, split equally between the two companies. The Xarelto settlement program is well-established, with fund allocation and dismissal of settled cases continuing to proceed. At this time, there remain only a very small number opt-out cases. As of February 1, 2022, 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 against all claims that are not yet settled.

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 1, 2022, 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). Taking into account the payments already made, the remaining provision for settlements amounts to US$0.2 billion as of December 31, 2021. This includes an allowance for outstanding claims, and the company 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 1, 2022, 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 has been appealed by plaintiffs. In addition, approximately 130 single-plaintiff claims have been served on Bayer. 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): A large number of lawsuits from plaintiffs claiming to have been exposed to glyphosate-based products manufactured by Bayer's subsidiary Monsanto have 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 a multidistrict litigation (MDL) in the Northern District of California for common pre-trial management.

In 2020, Monsanto reached an agreement in principle with plaintiffs, without admission of liability, to settle most of the current Roundup™ litigation and to put in place a mechanism to resolve potential future claims. As of February 1, 2022, Monsanto had reached settlements and/or was close to settling in a substantial number of claims. As we now have greater visibility regarding the number and quality of claims made, we consider that, of the approximately 138,000 claims in total which have been brought, approximately 107,000 have been settled or are not eligible for various reasons.

The three adverse verdicts – Johnson, Hardeman and Pilliod – are not covered by the settlement. In August 2021, the California Court of Appeal ruled against Monsanto in the Pilliod appeal. In November 2021, the California Supreme Court denied review of the appeal. The Company is considering its options with respect to seeking review by the Supreme Court of the United States. The Johnson case was concluded with payment of the US$20.5 million final judgment plus interest in March 2021. In May 2021, the United States Court of Appeals for the 9th Circuit ruled against Monsanto in the Hardeman appeal. The company has petitioned the U.S. Supreme Court for review in Hardeman. In December 2021 the Supreme Court invited the U.S. Solicitor General to file a brief in the matter stating the government's views. In light of the Supreme Court's solicitation of views from the government, Bayer will not entertain any further settlement discussions with plaintiff lawyers at this point in time.

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.

In October 2021, the jury in another trial, Clark, issued a verdict in Monsanto's favor. The jury determined that Roundup™ did not cause the plaintiff's child's lymphoma. The Clark trial took place in the Superior Court of the State of California for the County of Los Angeles.

In December 2021, the jury in another trial, Stephens, issued a verdict in Monsanto's favor. The jury determined that Roundup™ did not cause the plaintiff's lymphoma. The Stephens trial took place in the Superior Court of the State of California for the County of San Bernardino.

The mechanism to resolve potential future claims involved a class settlement agreement between Monsanto and plaintiffs' counsel. In May 2021, this agreement failed to obtain approval by Judge Chhabria of the U.S. District Court for the Northern District of California. Following the judge's denial, in May 2021 Bayer announced a series of measures to resolve potential future glyphosate litigation, combining both legal and commercial actions. In July 2021, Bayer provided an update on the progress made and announced additional details. Bayer has developed two scenarios based on a potential ruling by the Supreme Court of the United States in the Hardeman case. If the Supreme Court accepts the petition filed by Bayer in August 2021 for review and rules in favor of Bayer, it would effectively end potential future litigation. The second scenario assumes that the Supreme Court either refuses to hear the Hardeman case or issues a ruling in favor of the plaintiff, in which case Bayer would activate its own claims administration program. Bayer has implemented corresponding accounting measures for this scenario, resulting in a discounted allocation to provisions for litigations of €3.5 billion in the second quarter of 2021 on top of the existing provisions. As of December 31, 2021, Bayer had a provision of US$7.5 billion for the aforementioned settlements to resolve existing and future glyphosate claims.

Bayer is confident that this provides an effective path to manage and address any risks from potential future Roundup™ litigation, while simultaneously giving Bayer more control going forward. Bayer continues to believe there is no reason for safety concerns in connection with these products.

As of February 1, 2022, a total of 28 Canadian lawsuits relating to Roundup™ had been served upon Bayer, including 11 seeking class action certification.

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

Dicamba: In November 2016, Bader Peach Farms filed a lawsuit against Monsanto and BASF in Missouri state court. Subsequently, lawsuits from approximately 250 plaintiffs were filed in both U.S. state and federal courts alleging crop damage claims against Monsanto, primarily for soybeans, and there were approximately six non-soybean lawsuits. The general claims are that off-target movement from the dicamba herbicide and/or the Xtend™ system has damaged non-dicamba-tolerant soybean and other crops. The Dicamba Herbicide MDL, which currently includes approximately 30 cases, was formed in U.S. federal court in 2018; it is pending in the Eastern District of Missouri, Southeastern Division. In June 2021, a group of approximately 50 Texas grape vineyard growers filed a lawsuit in Texas state court (Timmons et al.) alleging dicamba damage to their vineyards, and a honey bee farmer (Coy's Honey Farm) filed a lawsuit in Arkansas federal court alleging damages due to dicamba. Both of those cases were subsequently transferred to the MDL, where a motion to dismiss is currently pending in the Coy's Honey Farm case, and the Timmons case was remanded back to Texas state court.

The first dicamba trial was the Bader Farms case which was heard in January 2020. The jury rendered a verdict for plaintiffs in the amount of US$15 million in compensatory damages and US$250 million in punitive damages, jointly and severally against defendants Monsanto and BASF. Monsanto filed post-trial motions resulting in the punitive damages being reduced to US$60 million, thereby reducing the total verdict to US$75 million. We have appealed to the 8th Circuit Court of Appeals.

With respect to all of the other dicamba cases except for Bader and a small number of newly filed lawsuits and claims, Monsanto has entered into a mass tort settlement agreement. The settlement will provide 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 to 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 dicamba damage claims made by growers of other, non-soybean crops, as well as attorneys' fees, litigation costs, and settlement administration costs. Claims could be filed until May 2021, and the settlement claims administrator is currently in the process of determining claim eligibility and the amounts to be awarded to eligible claimants. Taking into account the payments already made, the remaining provision for settlements amounts to US$0.3 billion as of December 31, 2021.

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

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 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).

In addition to the action filed in 2017 regarding the promoter patent, the Soybean Growers Association from the State of Mato Grosso (Aprosoja/MT) is also seeking a correction of the expiration dates of all three patents protecting Bayer's Intacta™ soybean technology in a separate action claiming that two of these patents had already expired and is additionally seeking a corresponding refund of paid royalties and reduction of ongoing royalty payments. In December 2021, the federal court decided to grant the requests by further soybean grower associations and the Cotton Producers Association of the State of Mato Grosso (AMPA) to be admitted as co-plaintiffs to this lawsuit. One of the two patents, the promoter patent, also covers Bollgard II RR Flex™ and is at issue in the disputes with AMPA. Aprosoja/MT argues that the term of the patents had been determined unconstitutionally. In September 2021, a decision by the Brazilian Supreme Court – that the term of patents previously determined to be a minimum of 10 years from the patent being granted is unconstitutional, and that this term shall instead be set at 20 years from the filing of the patent application – became final. This will apply retroactively to certain patents, thereby shortening their term. However, Bayer believes that neither Aprosoja/MT nor other associations are entitled to a refund of paid royalties or to a reduction of ongoing royalty payments.

Bayer believes it has meritorious defenses in the above 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, governmental and private parties have asserted that Bayer is liable for remediation costs and natural resource damages associated with the Lower Passaic River and/or the Newark Bay Complex in northern New Jersey. Bayer, along with a number of other parties, participated in an EPA-sponsored but non-binding allocation process for the Lower Passaic River remediation before an independent allocator. In 2020, the allocator issued its final report. The allocation assigned a very low share to Bayer, giving confidence that this connection will not result in a material liability. Bayer is a backup indemnitor for certain other liabilities from the Lower Passaic River and/or the Newark Bay Complex, which are being satisfied by an unrelated company. Bayer is currently unable to determine the extent of its potential future liability for this matter.

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 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. This agreement will require court approval before it becomes effective.

Additionally, in 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. Suits by Ohio and New Hampshire were settled in 2021, for a total amount of approximately US$105 million. Individual suits by Attorneys General of the States of Pennsylvania, Oregon, Delaware and Maryland are currently pending. A relatively small number of other states are expected to follow. 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. In July 2021, a jury in King County, Washington, awarded a total amount of US$185 million (compensatory and punitive damages) to three plaintiffs alleging personal injury from allegedly being exposed to PCBs in their workplace, the Sky Valley Education Center. Bayer disagrees with the verdict and has appealed. That case was followed by a second case, which began in November 2021, involving the same school building where the jury awarded approximately US$62 million (compensatory and punitive damages) in total to eight plaintiffs. Bayer disagrees with this second verdict based on many of the same errors seen in the first trial and plans to appeal. The undisputed evidence in these cases does not support the conclusions that plaintiffs were exposed to unsafe levels of PCBs or that any exposure could have possibly caused their claimed injuries. There are approximately 200 plaintiffs in connection with the relevant building. We believe that we also have meritorious defenses in these matters and intend to defend ourselves vigorously.

Shareholder litigation concerning Monsanto acquisition: In Germany and the United States, investors have filed lawsuits claiming damages suffered due to the drop in the company’s share price. Plaintiffs allege that the company's capital market communication in connection with the acquisition of Monsanto Company was flawed and that the information provided by Bayer on the risks, in particular regarding glyphosate product liability claims in the United States, was insufficient. In Germany, as of December 31, 2021, two claims were filed and served upon Bayer which are still at an early stage. A model case proceeding in accordance with the Capital Markets Model Case Act has been requested. Further claims were filed in December 2021 which will be served upon Bayer successively. In the parallel proceeding in the United States, one lawsuit seeking class action certification has been served upon Bayer. In October 2021, the United States District Court for the Northern District of California, San Francisco Division, decided that the lawsuit shall move forward with regard to some of the allegations. Bayer believes it has duly complied with its capital markets law obligations at all times in connection with the acquisition of Monsanto Company and its disclosures concerning glyphosate product liability claims and intends to defend itself vigorously against the claims in all shareholder lawsuits.

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, there were no significant sums that had limited availability due to foreign exchange restrictions in 2021 or 2020.

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

Net operating cash flow from continuing operations in 2021 amounted to €5,089 million (2020: €4,569 million). This figure included net settlement payments of €4,259 million (2020: €3,938 million) to resolve litigations, mainly in connection with the glyphosate and Essure™ litigations.

Net cash provided by investing activities in 2021 amounted to €855 million (2020: net cash of €4,073 million was used in investing activities). Cash outflows for property, plant and equipment and intangible assets increased to €2,611 million (2020: €2,418 million). Divestments resulted in a net outflow of €6 million (2020: inflow of €4,172 million), and pertained to the final purchase price adjustment for the divestment of the Animal Health business unit and smaller divestments in the Crop Science segment. The high inflows from divestments in the prior year were mainly due to the sale of the Animal Health business, which closed in the third quarter of 2020. Outflows for acquisitions, less acquired cash, amounted to €1,340 million (2020: €2,263 million) and mainly related to the acquisition of U.S. biopharmaceutical company Vividion Therapeutics, Inc, United States. The prior-year figure included cash outflows for the acquisition of Asklepios BioPharmaceutical Inc., United States, and KaNDy Therapeutics Ltd., United Kingdom, among other transactions. The net cash inflow from current financial assets came to €4,265 million (2020: outflow of €4,455 million). These cash inflows largely arose from the sale of investments in money market funds and were used to make settlement payments and repay loans, among other things.

Net cash of €5,645 million was used in financing activities in 2021 (2020: net cash of €423 million was provided by financing activities). This figure includes borrowings of €6,592 million (2020: €10,891 million) that were largely attributable to the placement of bonds with a volume of €4 billion in the first quarter and the issuance of commercial paper. Loan repayments amounted to €9,044 million (2020: €6,424 million) and pertained to the repayment of bonds and the syndicated credit facility drawn in June 2018 as bridge financing for the acquisition of Monsanto, among other things. Net interest payments amounted to €1,200 million (2020: €1,276 million). The Bayer Group paid out €1,993 million in dividends (2020: €2,768 million).

The changes in liabilities arising from financing activities in 2021 are presented in the following table:

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Liabilities from Financing Activities

		Cash flows	Noncash changes				
€ million	**Jan. 1, 2021**		**Acquisitions/ divestments**	**Currency/ other effects**	**New contracts IFRS 16**	**Fair value changes[1]**	**Dec. 31, 2021**
Bonds and notes	36,745	(642)	–	1,458	–	32	37,593
Liabilities to banks	3,669	(2,820)	–	(76)	–	–	773
Lease liabilities	1,143	(379)	11	50	287	53	1,165
Receivables/liabilities from derivatives	21	112	–	(2)	–	(160)	(29)
Other financial liabilities	77	1,195	–	–	–	–	1,272
Total	**41,655**	**(2,534)**	**11**	**1,430**	**287**	**(75)**	**40,774**

2020 figures restated

[1] Including effects of unwinding of discount

The changes in liabilities arising from financing activities in 2020 were as follows:

B 31/2

Liabilities from Financing Activities (Previous Year)

		Cash flows	Noncash changes				
€ million	**Jan. 1, 2020**		**Acquisitions/ divestments**	**Currency/ other 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	10	(419)	–	–	3,669
Lease liabilities	1,251	(418)	14	(76)	307	65	1,143
Receivables/liabilities from derivatives	64	(180)	–	2	–	135	21
Other financial liabilities	89	134	–	(146)	–	–	77
Total	**39,035**	**4,420**	**24**	**(2,416)**	**307**	**285**	**41,655**

2020 figures restated

[1] Including effects of unwinding of discount

Other Information

32. Audit fees

Prof. Dr. 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. Dr. Frank Beine is the responsible audit partner.

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	2020	2021	2020	2021
Financial statements auditing	13	14	5	6
Audit-related services and other audit work	5	4	2	2
Tax consultancy	3	1	–	–
Other services	–	–	–	–
Total	**21**	**19**	**7**	**8**

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 2021 mainly concerned voluntary financial statements audits in connection with the planned sale of the Environmental Science business. In addition, other Deloitte companies performed financial statements audit services for subsidiaries of Bayer AG as well as 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 is available at www.bayer.com/cpr.

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Related Parties

	Sales of goods and services		Purchase of goods and services		Receivables		Liabilities	
€ million	2020	2021	2020	2021	2020	2021	2020	2021
Nonconsolidated subsidiaries	17	45	1	1	26	34	30	107
Joint ventures	3	6	–	–	–	5	21	–
Associates	–	12	–	–	–	7	46	21
Post-employment benefit plans	–	–	–	–	886	864	160	127

Intercompany profits and losses for companies accounted for in the consolidated financial statements using the equity method were immaterial in 2021 and 2020.

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 (2020: €150 million) for Bayer-Pensionskasse VVaG. The entire amount remained drawn as of December 31, 2021. The carrying amount was €153 million (2020: €156 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, 2021 (December 31, 2020: €635 million). The carrying amount was €644 million (2020: €653 million). The outstanding receivables, comprised of different tranches, are each subject to a five-year interest-rate adjustment mechanism. Interest income of €11 million was recognized in 2021 (2020: €13 million) along with expense of €22 million (2020: income of €13 million) due to fair value changes.

No material impairment losses on receivables from related parties were recognized in 2021 or 2020.

34. Total compensation of the Board of Management and the Supervisory Board, advances and loans

In 2021, the compensation of the Board of Management and the Supervisory Board according to IFRS totaled €37,101 thousand (2020: €20,137 thousand). The compensation of the Supervisory Board amounted to €4,564 thousand (2020: €3,866 thousand) and was comprised entirely of short-term components.

The table below shows the individual components of Board of Management compensation in accordance with IFRS.

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Board of Management Compensation According to IFRS

€ thousand	2020	2021
Base compensation	5,070	5,975
Fringe benefits	1,651	2,982
Pension installment	–	303
Total short-term non-performance-related compensation	**6,721**	**9,260**
Short-term performance-related cash compensation	2,963	11,105
Total short-term compensation	**9,684**	**20,365**
Stock-based compensation (Aspire) earned in the respective year	5,742	5,261
Change in value of existing entitlements to stock-based compensation (Aspire)	(2,530)	(760)
Total stock-based compensation (long-term incentive)	**3,212**	**4,501**
Service cost for pension entitlements earned in the respective year	3,375	3,800
Total long-term compensation	**6,587**	**8,301**
Severance indemnity in connection with the termination of a service contract	–	3,871
Aggregate compensation (IFRS)	**16,271**	**32,537**

Total compensation of the Board of Management and Supervisory Board according to the German Commercial Code (HGB) amounted to €33,738 thousand (2020: €21,155 thousand), with the Board of Management accounting for €29,174 thousand (2020: €17,289 thousand) and the Supervisory Board for €4,564 thousand (2020: €3,866 thousand). The compensation of the Board of Management comprised short-term non-performance-related compensation of €9,260 thousand (2020: €6,721 thousand), short-term performance-related cash compensation of €11,105 thousand (€2,963 thousand), and long-term stock-based cash compensation (Aspire) of €8,809 thousand (2020: €7,605 thousand). The compensation of the Supervisory Board included attendance fees of €239 thousand (2020: €27 thousand).

Pension payments to former members of the Board of Management and their surviving dependents in 2021 amounted to €11,789 thousand (2020: €12,315 thousand). The defined benefit obligation for former members of the Board of Management and their surviving dependents amounted to €203,347 thousand (2020: €208,524 thousand). There were no advances or loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 2021, or at any time during 2021 or 2020.

Further information on the compensation of the Board of Management and Supervisory Board is provided in the Compensation Report, which is publicly accessible at www.bayer.com/cpr.

Leverkusen, February 18, 2022
Bayer Aktiengesellschaft

The Board of Management

Werner Baumann	Sarena Lin	Wolfgang Nickl
Stefan Oelrich	Rodrigo Santos	Heiko Schipper

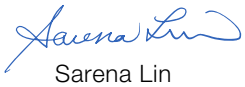
Responsibility Statement

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 18, 2022
Bayer Aktiengesellschaft

The Board of Management


Werner Baumann


Sarena Lin


Wolfgang Nickl


Stefan Oelrich


Rodrigo Santos


Heiko Schipper

Independent Auditor's Report

To Bayer Aktiengesellschaft, Leverkusen

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND 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 statements of financial position as at December 31, 2021, the consolidated income statements and the consolidated statements of other comprehensive income, the consolidated statements of changes in equity and the consolidated statements of cash flows for the financial year from January 1 to December 31, 2021, 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, 2021. In accordance with the German legal requirements, we have not audited the content of those parts of the combined management report presented in the Appendix to the Independent 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, 2021 and of its financial performance for the financial year from January 1 to December 31, 2021; 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 presented in the Appendix to the Independent 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 combined management report.

Basis for the audit opinions

We conducted our audit of the consolidated financial statements and 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 "Responsibilities of the independent auditor for the audit of the consolidated financial statements and combined management report" section of our Independent 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 accordance with Article 10 (2) letter (f) of the EU Audit Regulation, we further 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 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, 2021. 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. Recoverability of goodwill and Other intangible assets
2. Depiction of risks arising from product-related legal disputes
3. Depiction of restructuring measures

Our presentation of these key audit matters has been structured as follows:

a) Description of the matter in question (including reference to the corresponding statements in the consolidated financial statements)
b) Auditor´s response

1. Recoverability of goodwill and Other intangible assets

a) In the consolidated financial statements, an amount of EUR 40,106 million (33% of the Group's total assets) is presented under the item of the statement of financial position "goodwill". "Other intangible assets" also include patents and technologies of EUR 12,426 million (10% of the Group's total assets), trademark rights of EUR 6,488 million (5% of the Group's total assets) and research and development projects of EUR 4,300 million (4% of the Group's total assets). Other items include marketing and sales rights, production rights and other rights, and advance payments made in the amount of EUR 3,044 million (3% of consolidated total assets). The Company allocates the goodwill to the reporting segments within the Bayer Group. Regular impairment tests of goodwill and R&D projects and ad-hoc impairment tests of Other intangible assets are carried out by comparing the respective carrying amounts with their respective recoverable amounts. As a rule, the recoverable amount is determined on the basis of the fair value less costs to sell. Such determination is based on capital value-oriented methods due to the fact that market values are usually not available for the individual strategic business entities. The fair value is calculated using discounted cash flow models based on the Bayer Group's medium-term planning prepared by the Executive Directors and extrapolated on the basis of assumptions for long-term growth rates. Discounting is based on the weighted average cost of capital

of the cash-generating units 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 cash-generating units concerned (usually the strategic business entity or product family) and the discount rate applied, 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 statements made by the Executive Directors on the subject of goodwill and 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 assured 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. We also assessed the 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 checking selected planning assumptions against general and industry-specific market expectations. For this, we also assured ourselves that the costs of the Group functions included in the Enabling Functions and Consolidation segment of the segment report were appropriately taken into account in the impairment test of the reportable segments 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 our own, additional sensitivity analyses of the reportable segments (carrying amount in comparison with the recoverable amount). We also consulted internal specialists from the Valuation Services Department on specific areas of the audit.

2. Depiction of risks arising from product-related legal disputes

a) Bayer Group companies are involved in judicial and extra-judicial proceedings with public authorities, competitors and other parties. These proceedings give rise to legal risks, particularly 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 brought in the United States against Monsanto Company, St. Louis/U.S.A. (Monsanto), a subsidiary of Bayer Aktiengesellschaft. In these lawsuits, the plaintiffs allege that they were exposed to glyphosate-containing products manufactured by Monsanto and that this exposure damaged their health. In addition, Monsanto has been named in lawsuits brought by various governmental entities in the United States, which claim that Monsanto and its predecessor companies, as manufacturers of PCBs, are responsible for various kinds of environmental damage caused by PCBs, including in bodies of water. In the above-mentioned litigations, Bayer concluded settlement agreements of varying scope with some of the plaintiffs or plaintiffs' attorneys already in 2020 and in the past financial year to resolve parts of the litigations concerned. The PCB related class settlement with municipal government entities was still pending, subject to court approval, at the reporting date. Monsanto is also facing lawsuits alleging personal injury and/or property damage from the use of and exposure to PCB products.

Whether and to what extent it is necessary to recognize a provision to account for one or more of the present legal disputes is determined to a large extent by the estimates and discretionary assumptions of 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 statements made and explanations provided by the Executive Directors on the subject of the legal disputes mentioned above 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 judicial and extra-judicial 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. We also checked the recognition and the measurement of the relevant provisions for those settlement agreements that have already been concluded in connection with the significant lawsuits in the financial year by performing sample-based comparisons with the underlying settlement agreements. The evolution of significant legal disputes, including the estimations concerning the possible outcome of proceedings, was made available to us in writing by the Company. As of the reporting date, we also requested external attorney confirmations, which we checked against the risk assessment made by the Executive Directors regarding the product-related disputes listed under "Description of the matter in question" and critically assessed. Taking these estimations into account, we also critically assessed the assumptions underlying the provisions for expected defense costs and assessed the plausibility of the provision amounts on the basis of experience from similar proceedings in the past and on other evidence.

3. Depiction of restructuring issues

a) In the last years, Bayer Aktiengesellschaft has successively initiated various comprehensive, Groupwide restructuring programs that also entail extensive workforce adjustment measures. A not inconsiderable part of the workforce adjustment measures is attributable to Germany, where layoffs for operational reasons are excluded until 2025 owing to works agreements. In consultation with the competent employee representative bodies, the units affected by the workforce adjustment measures in the individual restructuring areas have been identified and the affected employees have been informed with the goal of concluding appropriate termination agreements. To the extent that the communicated workforce reduction targets have not yet been covered by concluded termination agreements, the expenses for the still outstanding termination agreements have been estimated on the basis of the knowledge gained from the termination agreements that have already been concluded, the experience made with the implementation of comparable programs in the last years, and the specific compensation and age structures in the affected restructuring areas. As of December 31, 2021, a provision in the amount of EUR 1,362 million (PY: EUR 980 million) was recognized 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 statements of the Executive Directors on the subject of the restructuring provision are provided in Section 23 of the notes to the consolidated financial statements.

b) We sought to determine 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 and critically assessed and verified the plausibility of the underlying estimates and assumptions related to the recognition and measurement of the provisions. In particular, we evaluated the status of implementation and negotiations with employees and employee representatives, mainly to determine whether the employees were informed in sufficient detail about the restructuring programs and individual components of the planned restructuring measures. For the severance agreements already concluded with employees by the end of the reporting period, we sought to determine whether the provisions set up for this purpose are based on the underlying contractual agreements. In order to assess the plausibility of the amount of the provisions in those cases in which individual severance agreements have not yet been concluded, we analyzed the restructuring programs involving job cuts developed in the personnel departments with respect 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 actually concluded agreements – and discussed them with the persons responsible in the personnel departments.

Other information

The Executive Directors and the Supervisory Board are responsible for the Other information. The Other information comprises:

- The Report of the Supervisory Board,
- The unaudited content of those parts of the combined management report specified in the Appendix to the Independent Auditor's Report,
- The responsibility statement of the Executive Directors regarding the consolidated financial statements and combined management report pursuant to Section 297 (2) sentence 4 and Section 315 (1) sentence 5 HGB, respectively,
- The introduction to the Compensation Report,
- The Compensation Report, and
- All other parts of the Annual Report,
- but not the consolidated financial statements, not the audited content of the combined management report, and not our Independent Auditor's Report on these subjects.

The Supervisory Board is responsible for the Report of the Supervisory Board and the introduction to the Compensation Report. The Executive Directors and the Supervisory Board are responsible for the declaration according to Section 161 German Stock Corporation Act (AktG), which is part of the Corporate Governance Statement included in the section "Corporate governance report" of the combined management report, and for the Compensation Report. Apart from that, the Executive Directors are responsible for the Other information.

Our audit opinions on the consolidated financial statements and 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 on this subject.

In connection with our audit, our responsibility is to read the above-mentioned Other information and determine whether the Other information

- is materially inconsistent with the consolidated financial statements, the audited content of the combined management report, or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If we conclude on the basis of the work we have performed that there is a material misstatement of this Other information, we are required to report that fact. We have no findings to report on this subject.

Responsibilities of the Executive Directors and the Supervisory Board for the consolidated financial statements and 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 controls as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatements, 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 the going-concern status. 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 determined 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 combined management report.

Responsibilities of the independent auditor for the audit of the consolidated financial statements and combined management report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatements, 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 Independent Auditor's Report that includes our audit opinions on the consolidated financial statements and 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 misstatements in the consolidated financial statements and 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 overriding of internal controls.
- obtain an understanding of the internal control systems relevant to the audit of the consolidated financial statements and the 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 applied by the Executive Directors and the reasonableness of the estimates and related disclosures made by the Executive Directors.

- conclude on the appropriateness of the Executive Directors' use of the going-concern basis of accounting and, based on the audit evidence obtained, determine 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 Independent Auditor's Report to the related disclosures in the consolidated financial statements and 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 Independent 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 determine whether the consolidated financial statements present the underlying transactions and events in a manner such 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 combined management report. We are responsible for the direction, supervision and performance of the audit of the consolidated financial statements. We bear sole responsibility 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 particularly evaluate the significant assumptions applied by the Executive Directors as the 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 applied 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 the internal control system that we identify during our audit.

We 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 key audit matters. We describe these matters in our Independent Auditor's Report unless laws or regulations preclude public disclosure of the matter in question.

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OTHER STATUTORY AND LEGAL REQUIREMENTS

Report on the Audit of the Electronic Files of the Consolidated Financial Statements and Combined Management Report prepared for Publication pursuant to Section 317 (3a) HGB

Audit opinion

In accordance with Section 317 (3a) HGB, we have assessed with reasonable assurance whether the electronic files of the consolidated financial statements and combined management report (hereafter referred to as "ESEF files") prepared for publication, contained in the provided file, which has the SHA-256 value FDFACC55D338D516D374CD2D902C9FB2BB2F2FE46E1B68AA5A45B64C5E98C3AA, 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 information of consolidated financial statements and combined management report 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 combined management report prepared for publication contained in the provided file stated above meet, in all material respects, the require-ments 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 accompanying combined management report for the financial year from January 1 to December 31, 2021 contained in the foregoing "Report on the audit of the consolidated financial statements and 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 combined management report contained in the provided file stated above in accordance with Section 317 (3a) HGB and on the basis of the IDW Auditing Standard: Audit of the Electronic Files of the Annual Financial Statements and Management Report prepared for Publication pursuant to Section 317 (3a) HGB (IDW AuS 410 10/2021) and the International Standard on Assurance Engagements 3000 (Revised). Our responsibilities in this context are further described in the section "Responsibilities of the independent auditor for the audit of the ESEF files". 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 Supervisory Board for the ESEF files

The Executive Directors of the Company are responsible for the preparation of the ESEF files based on the electronic files of the consolidated financial statements and 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 Company are responsible for such internal controls as they have determined necessary to enable the preparation of ESEF files that are free from material violations of the requirements concerning the electronic reporting format pursuant to Section 328 (1) HGB, whether due to fraud or error.

The Supervisory Board is responsible for overseeing the process for the preparation of the ESEF files as part of the financial reporting process.

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Responsibilities of the independent auditor for the audit of the ESEF files

Our objectives are to obtain reasonable assurance about whether the ESEF files are free from material violations, whether due to fraud or error, of 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 of 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 controls 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 provided file containing the ESEF files meets the requirements of the Delegated Regulation (EU) 2019/815 in the version applicable as of the reporting 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 audited combined management report with the same content as 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 in accordance with Articles 4 and 6 of the Commission Delegated Regulation (EU) 2019/815 in the version in effect on the reporting date.

Further disclosures pursuant to Article 10 EU Audit Regulation

We were elected as the auditor of the consolidated financial statements by the shareholders' meeting on April 27, 2021. We were engaged by the Supervisory Board on May 25, 2021. We have been the auditor of the consolidated financial statements of Bayer Aktiengesellschaft, Leverkusen/Germany, without interruption since financial year 2017.

We declare that the audit opinions expressed in this Independent 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).

OTHER MATTER – USE OF THE INDEPENDENT AUDITOR'S REPORT

Our Independent Auditor's Report must always be read in conjunction with the audited consolidated financial statements and the audited combined management report, as well as the audited ESEF files. The consolidated financial statements and combined management report transferred into the ESEF format – including the versions to be published in the German Federal Gazette – are merely electronic reproductions of the audited consolidated financial statements and the audited combined management report and do not take their place. In particular, the ESEF Report and our audit opinion contained therein may only be used in conjunction with the ESEF files provided in electronic form.

GERMAN PUBLIC AUDITOR RESONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Prof. Dr. Frank Beine.

Munich, February 23, 2022

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Signed: Prof. Dr. Frank Beine
Wirtschaftsprüfer
(German Public Auditor)

Signed: Michael Mehren
Wirtschaftsprüfer
(German Public Auditor)

Appendix to the Independent Auditor's Report:
Parts of the combined management report whose content was not audited
We did not audit the content of the following parts of the combined management report:

- Table A 1.2.1/2 "Non-financial Group targets through 2030", including the statements in the footnotes, and contained in Section 1.2.1 of the combined management report, as well as the following explanatory passages regarding the Group's non-financial targets,
- The statements made in the sub-section "EU Taxonomy" in Section 1.2.1 of the combined management report,
- The statements made on the subject of Scope 3 emissions in Table A 1.7/1, which are included in Section 1.7 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,
- All cross-references to the Company's websites in the margins and the information to which these cross-references refer.

Limited Assurance Report of the Independent Auditor on the Group's Supplemental Non-Financial Reporting 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 2021 of Bayer Aktiengesellschaft, Leverkusen/Germany, for the period from January 1 to December 31, 2021: 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, the implementation of Regulation (EU) 2020/852 and the information on scope 3 emissions as presented in table A 1.7/1 "Greenhouse Gas Emissions" (hereafter referred to as: "supplementary non-financial reporting").

Our engagement does not include external sources of documentation, interviews or expert opinions mentioned in the supplementary non-financial reporting.

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"), the method papers developed by Bayer and Article 8 of Regulation (EU) 2020/852 of the European Parliament and of the Council of 18 June 2020 establishing a framework to facilitate sustainable investments and amending Regulation (EU) 2019/2088 (hereinafter the "EU Taxonomy Regulation") and the delegated acts issued for this purpose, as well as with their own interpretation of the wording and terms contained in the EU Taxonomy Regulation and the delegated acts issued for this purpose, as presented in section 1.2.1 of the combined management report.

This responsibility of the legal representatives of the company includes the selection and application of appropriate methods for supplementary non-financial reporting as well as the making of assumptions and estimates for individual non-financial information of the group that are appropriate under the given circumstances. Furthermore, the executive directors are responsible for the internal controls they have deemed necessary to enable the preparation of non-financial reporting that is free from material misstatement, due to fraud (manipulation of non-financial reporting) or error.

The EU Taxonomy Regulation and the delegated acts issued for it contain formulations and terms that are still subject to considerable uncertainties of interpretation and for which clarifications have not yet been published in every case. For this reason, the legal representatives have laid down their interpretation of the EU Taxonomy Regulation and the delegated legal acts issued in connection with this in section 1.2.1 of the combined management report. You are responsible for the reasonableness of this interpretation. Due to the inherent risk that undefined legal terms can be interpreted differently, the legal conformity of the interpretation is subject to uncertainties.

The accuracy and completeness of the environmental data in the non-financial reporting are subject to inherent limitations, which result from the way the data was collected and calculated and from the assumptions made.

Independence and quality assurance of the auditing company

We have complied with the German professional regulations on independence and other professional conduct requirements.

Our auditing company applies the national legal regulations and professional statements - in particular the professional statutes for auditors and sworn auditors (BS WP/vBP) as well as the IDW quality assurance standard issued by the Institute of Auditors (IDW): Requirements for quality assurance in the auditing practice (IDW QS 1) - and accordingly maintains an extensive quality assurance system that includes documented regulations and measures in relation to compliance with professional behavior requirements, professional standards and relevant statutory and other legal requirements.

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.

We conducted our assurance engagement in accordance with the International Standard on Assurance Engagements (ISAE) 3000 (Revised): Assurance Engagements Other than Audits or Reviews of Historical Financial Information, issued by the IAASB. We have to plan and perform the audit in such a way that we can assess with limited certainty whether matters have become known to us that lead us to the opinion that the supplementary non-financial reporting in the combined management report of Bayer Aktiengesellschaft with the exception of the external sources of documentation or expert opinions mentioned there, in all material respects not in accordance with the GRI principles, the method papers developed by Bayer and those in Article 8 of the EU Taxonomy Regulation and the delegated acts issued for this purpose, as well as with their own in Section 1.2.1 of the combined management report contains the interpretation of the formulations and terms contained in the EU Taxonomy Regulation and the delegated acts adopted for this purpose. 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 2021 and February 2022, 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

The legal representatives have to interpret vague legal terms when determining the information in accordance with Article 8 of the EU Taxonomy Regulation. Due to the inherent risk that undefined legal terms can be interpreted differently, the legal conformity of the interpretation and, accordingly, our related examination are subject to uncertainties.

Practitioner's Conclusion

Based on the audit procedures performed and the audit evidence obtained, nothing has come to our attention that causes us to believe that the information in the combined management report of Bayer Aktiengesellschaft, Leverkusen, for the financial year from January 1 to December 31, 2021 has not been prepared in all material respects in accordance with the GRI principles, the method papers developed by Bayer, the EU Taxonomy Regulation and the delegated acts issued in this regard, and the interpretation by the legal representatives presented in Section 1.2.1 of the combined management report.

Our conclusion does not include external sources of documentation, interviews or expert opinions mentioned in the supplementary non-financial reporting.

Restriction of Use

We issue this report on the basis of our order agreement concluded with Bayer Aktiengesellschaft "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 2021" (including the General Conditions of Contract for Auditors and Auditing Firms of January 1, 2017 of the Institute of Auditors in Germany eV). We would like to point out that the audit was carried out for the purposes of Bayer Aktiengesellschaft and the note is only intended to inform Bayer Aktiengesellschaft about the result of the audit. Consequently, it may not be suitable for any purpose other than that stated above. The note is therefore not intended for third parties to make (financial) decisions based on it. Our responsibility is solely towards Bayer Aktiengesellschaft, Leverkusen, and is also in accordance with the order agreement made with the company dated November 11/November 14, 2021 and the "General Terms and Conditions for Public Accountants and Auditing Firms" of January 1, 2017 of the Institute of Public Accountants in Germany e.V. However, we assume no responsibility towards third parties. Our audit opinion is not modified in this respect.

Munich/Germany, February 21, 2022

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Signed: Prof. Dr. Frank Beine
Wirtschaftsprüfer
(German Public Auditor)

Signed: Sebastian Dingel

C Compensation Report

1. Foreword by the Chairman of the Supervisory Board

On behalf of the Supervisory Board of Bayer AG, I would like to thank you, our stockholders, for your continued support, and our employees for their tremendous dedication. The lingering effects of the COVID-19 pandemic remained evident in many areas of our lives last year. However, thanks to the successful development of effective vaccines, life returned somewhat to normal in many parts of the world. Taking the right steps and strategic decisions during 2020 provided a strong foundation to build on, and we were able to meet and in some cases exceed our targets for 2021. We are deeply proud of the dedication and solidarity shown by our employees, who met our customers' needs despite the challenges presented by COVID-19. As part of this report on the compensation of the Board of Management and the Supervisory Board in 2021, I would like to highlight some of the key events of last year.

Stricter requirements for Board of Management compensation and reporting changes due to ARUG II

The requirements that our stockholders, policymakers and the public place on how we design and disclose the compensation of our Board of Management and Supervisory Board have increased. We satisfy these requirements by employing a Board of Management compensation system that 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. The compensation system was approved by an overwhelming majority (94%) at our 2020 Annual Stockholders' Meeting. This Compensation Report provides transparent, specific information on compensation for 2021.

The turn of the year 2021 brought with it a change in the framework conditions for reporting on Board of Management and Supervisory Board compensation as the act transposing the second EU Shareholder Rights Directive into German law (ARUG II) came into effect. This is the first Compensation Report we have prepared according to the new regulatory requirements of Section 162 of the German Stock Corporation Act (AktG). We have deliberately opted to provide additional information that goes beyond the requirements of Section 162 AktG to ensure we provide you with the highest degree of clarity and transparency. The Board of Management and the Supervisory Board have therefore worked together to produce a Compensation Report that is as clear and easy to understand as possible, while observing all the regulatory requirements of Section 162 of the AktG.

Business performance and Board of Management compensation in 2021

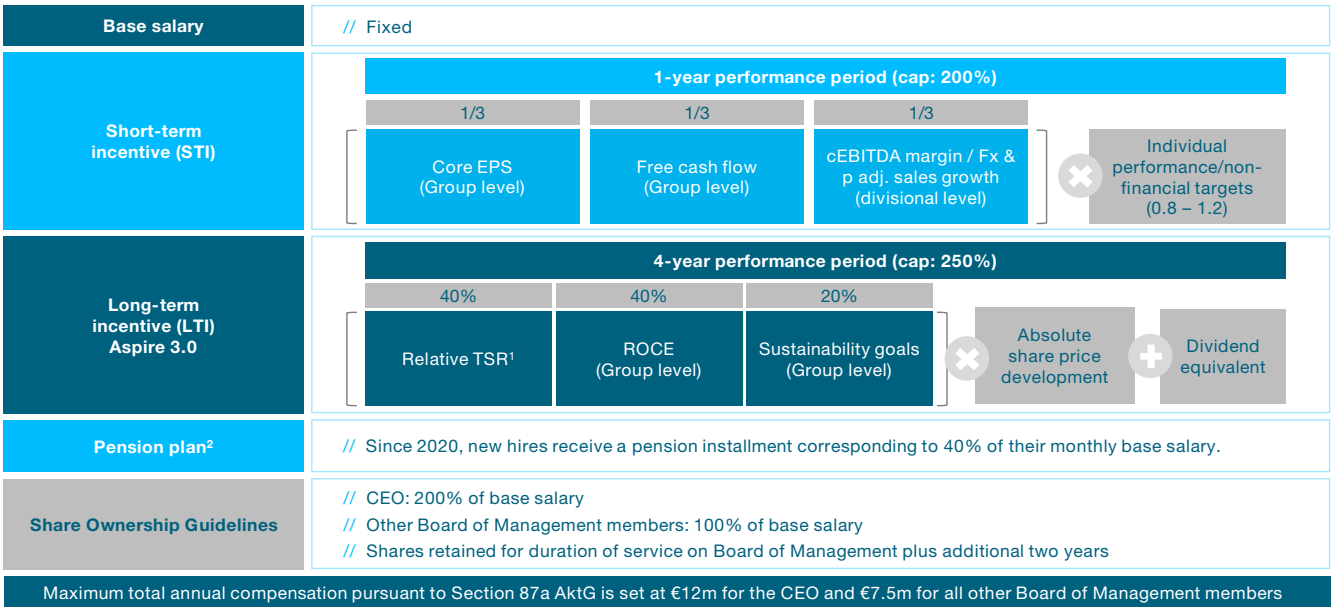
As a leading life science company, Bayer is active in the fields of health and nutrition, and offers attractive, long-term growth, earnings and cash flow potential. Our strategy is geared toward successfully building and operating leading businesses in these fields of expertise.

The compensation system for the Board of Management is aligned toward the long-term development of our company. The key performance indicators included in the variable compensation components to evaluate the performance of Board of Management members are in close alignment with our strategy and the targets communicated to our stockholders. This ensures that

our company offers the right financial incentives, while also establishing a clear link between the performance of the Board of Management and its compensation.

C 1/1

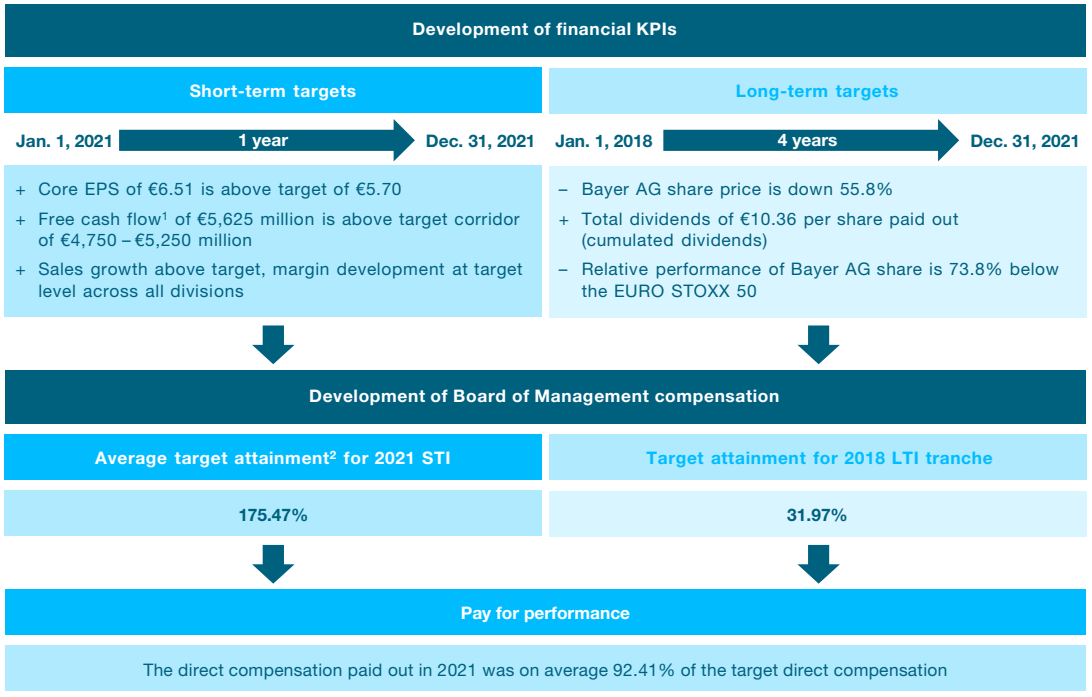
Board of Management Compensation System – Overview



[1] Total shareholder return of the Bayer share; comparison with EURO STOXX 50 TR
[2] Change to pension plan does not apply to existing service contracts, in line with the Shareholder Rights Directive and the German Corporate Governance Code.

C 1/2

Development of Financial KPIs and Board of Management Compensation



[1] Free cash flow excluding payments made in connection with the settlement agreements concluded in the glyphosate, dicamba, PCB and Essure™ litigations (significant nonrecurring extraordinary effects)
[2] Average target attainment among Board of Management members

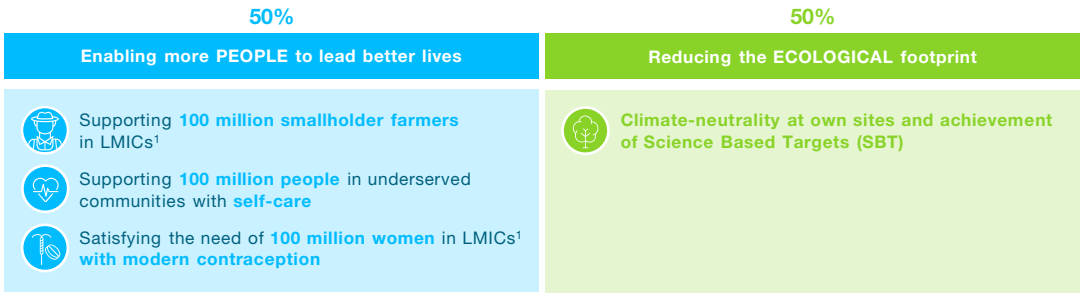
Additional considerations to the Supervisory Board's approach to Board of Management compensation

The ESG Committee's duties relate to sustainable corporate governance and the company's business activities in the areas of environmental protection, social issues and corporate governance (ESG).

Sustainability and ESG[1] are an integral part of our business strategy and our growth plans. The Supervisory Board supports the Board of Management's strategy of setting ambitious and measurable sustainability targets. Bayer strives to improve people's quality of life by promoting growth in underserved regions while at the same time reducing the ecological footprint through the sustainable use of resources. Our initiatives in this area are supported by the Sustainability Council, a body of qualified experts that we established in 2020, as well as by an ESG Committee of the Supervisory Board that was formed at the beginning of 2022 and is chaired by Ertharin Cousin. Furthermore, the compensation system approved by a large majority at the 2020 Annual Stockholders' Meeting has applied for the members of the Board of Management since January 1, 2020. The Supervisory Board has incorporated specific, measurable and transparent sustainability targets (ESG targets) into the Aspire 3.0 tranche issued in 2021 as part of the long-term variable cash compensation. This illustrates how we are taking steps to deliver on our Group-wide sustainability targets, such as pursuing our vision "Health for all, hunger for none," reducing our ecological footprint along the value chain and becoming carbon-neutral in our operations by 2030, by targeting measurable results and adopting clear commitments.

C 1/3

Sustainability Targets Through 2030



[1] LMICs = low- and middle-income countries

With a further 10 companies joining the DAX and taking its size to 40 in total, the Supervisory Board conducted an extensive review of the compensation philosophy it followed when establishing the compensation levels of the Board of Management, and adjusted target compensation accordingly. In the future, the DAX 40 companies will be applied as a benchmark in the horizontal comparison when setting compensation levels. An international comparison market comprising selected competitors will also be taken into account, ensuring the company offers a compensation package that is in line with the market and at the same time competitive.

To align the Board of Management compensation structure even more closely with the company's long-term performance, the Supervisory Board also decided to recalibrate the variable compensation of all Board of Management members in favor of long-term variable cash compensation with effect from January 1, 2022. Effective January 1, 2022, the target amounts in the long-term variable cash compensation of all Board of Management members were raised from 150% to 160% of base compensation, and the target amounts in their short-term variable cash compensation were reduced by the same amount, from 100% to 90% of base compensation.

[1] ESG = environmental, social and governance

Annual Stockholders' Meeting resolution on Supervisory Board compensation

Pursuant to Section 113, Paragraph 3, Sentences 1 and 2 of the German Stock Corporation Act, the compensation of the members of the supervisory board of a listed company must be resolved upon by the stockholders' meeting at least every four years.

Compensation levels for members of Bayer's Supervisory Board were adjusted by the 2017 Annual Stockholders' Meeting, with these adjustments having formed part of a compensation system that remained largely unchanged compared with the previous iteration. The 2020 Annual Stockholders' Meeting confirmed the compensation of the Supervisory Board members as set forth in Article 12 of the Articles of Incorporation. The compensation of the members of the Supervisory Board is regularly reviewed. A review performed at the beginning of 2021 with the assistance of an independent external compensation expert showed that the Supervisory Board's compensation at that time no longer reflected market practice and the demands made on the members of Bayer AG's Supervisory Board. In addition, the international market and business environment as well as the regulatory framework had become more complex since the compensation of the Supervisory Board was last adjusted in 2017. As such, the demands and expectations on the members of the Supervisory Board had increased. The compensation of the Supervisory Board needs to be competitive to ensure that the Supervisory Board is composed of well qualified, internationally experienced corporate officers. This is a priority communicated by many investors.

It was therefore proposed to the Annual Stockholders' Meeting on April 27, 2021, that the compensation of the Supervisory Board be adjusted with effect from April 28, 2021. The 2021 Annual Stockholders' Meeting approved the resolution to adjust the compensation of the Supervisory Board by a significant majority of 97.8%. Article 12 of the Articles of Incorporation of Bayer AG was amended accordingly.

2. Compensation Report

The Guidelines for Sustainable Management Board Remuneration Systems were developed by supervisory board chairpersons, investor representatives, scientists and corporate governance experts.

The Compensation Report produced by the Board of Management and the Supervisory Board of Bayer Aktiengesellschaft (Bayer AG) outlines the essential features of the compensation packages for the members of the Board of Management and the Supervisory Board of Bayer AG and provides information on the compensation awarded and due to each current or former member of the Board of Management and the Supervisory Board in 2021. Awarded compensation encompasses compensation for services that have been fully rendered once the fiscal year ends. The report thus complies with the regulatory requirements of Section 162 of the German Stock Corporation Act (AktG) and the recommendations and suggestions in the December 16, 2019, version of the German Corporate Governance Code. The Guidelines for Sustainable Management Board Remuneration Systems, which was most recently updated in September 2021, are also taken into account.

Pursuant to the stipulations of Section 120a, Paragraph 4 of the AktG, we will propose that the Annual Stockholders' Meeting to be held on April 29, 2022, resolve on the approval of the prepared and audited Compensation Report.

2.1 Principles applied for Board of Management compensation

The Supervisory Board sets the Board of Management's compensation pursuant to Section 87, Paragraph 1 of the AktG. In doing so, the Supervisory Board is supported by its Human Resources Committee, which develops recommendations for the compensation of the Board of Management 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.

The current 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 is submitted to the Annual Stockholders' Meeting for approval whenever significant changes are made to this system, or at least every four years.

Objectives of the compensation system

Relevant key performance indicators and ambitious targets ensure that Board of Management compensation is oriented toward performance and success.

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.

The objectives of Bayer AG are to achieve sustainable business success and profitable growth. The aim is to continuously increase value for our stockholders and other stakeholders and ensure the continuity of our company for the long term. Growth, profitability, liquidity and return on investment are the relevant financial performance indicators for incentivization within the scope of our compensation system for the Board of Management. The attainment of ambitious sustainability targets (ESG targets) also forms part of the compensation system. By acting sustainably, we are safeguarding our future social and economic viability.

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 thus to ensure that the same performance indicators and targets are set. This is the only way to ensure that all decision-makers pursue the same goals for the company's successful development.

In establishing the compensation of the Board of Management, the Supervisory Board applies the following guidelines and principles:

C 2.1/1

We ensure …	We avoid …
✓ … that we promote long-term and sustainable performance	× … prioritizing short-term success at the expense of long-term performance
✓ … that we set ambitious and measurable targets	× … offering guaranteed variable compensation levels
✓ … that compensation is aligned toward performance and success	× … paying special discretionary bonuses
✓ … that short-term variable compensation is aligned toward the attainment of annual targets	× … neglecting the interests of our stockholders
✓ … that long-term variable compensation is aligned toward share price performance, return on investment and attainment of ESG targets	× … incentivizing inappropriate risks
✓ … that we take regulatory requirements fully into account	× … inappropriately high payouts and excessive severance payments
✓ … that we offer appropriate compensation in line with market rates	× … retrospectively adjusting targets
✓ … that compensation is capped	× … providing insufficient transparency in our compensation reporting
✓ … that we are highly transparent in our compensation reporting	× … overlapping STI and LTI targets
✓ … that we set measurable and transparent ESG targets	× … setting ESG targets that can't be measured

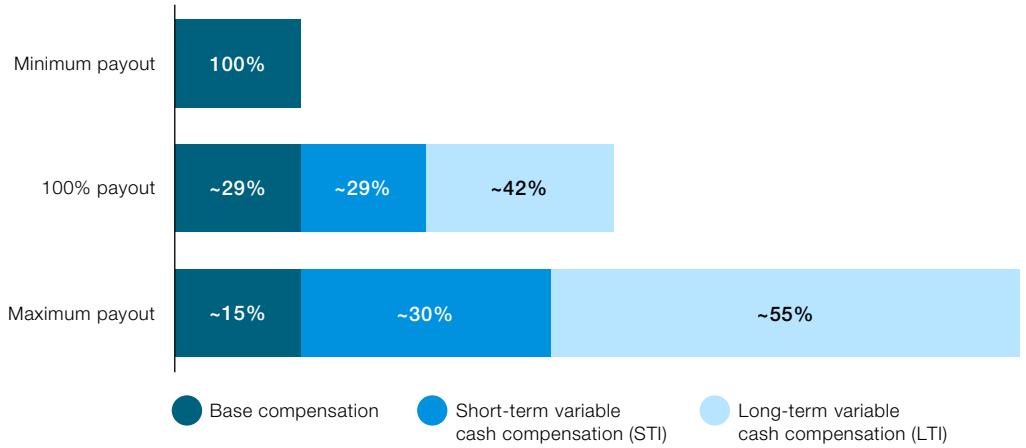
Design of Board of Management compensation

The total compensation of the members of the Board of Management of Bayer AG comprises fixed and variable components. In addition to base compensation, the fixed, non-performance-related compensation also includes fringe benefits along with pension entitlements or a pension installment.

The variable, performance-related cash compensation components are the short-term incentive (STI) and the long-term incentive (LTI). Before the start of each fiscal year, the Supervisory Board sets appropriate, ambitious targets for the variable compensation components that aim to ensure the long-term implementation of the corporate strategy. The degree to which these targets are attained determines the level of the payouts.

C 2.1/2

Design of Board of Management compensation



Over 70% of the contractually agreed target compensation is performance-related. Variable compensation can even account for a considerably higher share of overall compensation should performance targets be exceeded.

Scenario[1]	Explanation
Minimum payout	STI: 0% of target amount; LTI: 0% of target amount
100% payout	STI: 100% of target amount; LTI: 100% of target amount
Maximum payout	STI: 200% of target amount; LTI: 250% of target amount

[1] In isolated cases, the specific, individual compensation structure in a fiscal year may deviate slightly from the structure presented above.

Total compensation also includes fringe benefits, which are usually granted in a ratio of about 5% to the respective base compensation. The pension installment equals 40% of the respective base compensation and is awarded to Board of Management members appointed after January 1, 2020.

Annual fringe benefit expenses can fluctuate from one Board of Management member and one fiscal year to the next.

Total compensation is capped for each member of the Board of Management (maximum total compensation).

In addition to the compensation components mentioned above, malus and clawback provisions and Share Ownership Guidelines are also in place. There are also regulations in place to determine whether payments are made in the event of early termination of service on the Board of Management, and if so, in what amount.

An overview of the compensation system for the Board of Management is given below (see also www.bayer.com/cpr for a detailed description of the compensation system).

C 2.1/3

Board of Management Compensation System for 2021

Compensation component	Design
Base compensation	// Fixed, contractually agreed compensation // Paid out in monthy installments

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

Short-term variable cash compensation (STI)	The payout after one year is calculated based on the target amount according to the following parameters:
	// 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.[1]) at divisional level
	// Individual performance factor (0.8 – 1.2) as a multiplier
	// Payout capped at 200% of individual target amount

Long-term variable cash compensation (LTI)	The payout is calculated based on the target amount after determining target attainment in the fourth year according to the following parameters:
	// Absolute performance of Bayer stock
	// 40% weighting: Performance relative to EURO STOXX 50 Total Return
	// 40% weighting: ROCE at Group level
	// 20% weighting: Sustainability targets
	plus 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

Pension entitlements/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 // Members of the Board of Management appointed prior to January 1, 2020, receive contribution-based pension entitlements
Maximum total compensation	// The maximum total annual compensation paid out for 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
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)
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
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, any severance payments are deducted from the indemnity payment
Change of control	// 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, or 200% of annual cash compensation if they were appointed prior to 2010. The payment is limited in either case to the compensation for the remaining term of the respective contract, capped at twice the annual compensation.

[1] Fx & p adj. = currency- and portfolio-adjusted

Caps on variable compensation components and total compensation

Performance evaluation for both of the variable compensation components is fundamentally oriented toward profitability, value creation 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 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 cap) or 250% (LTI cap) of the individual target amount.

The Supervisory Board has set an absolute amount in euros for the maximum total compensation granted 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
// Short-term variable cash compensation (STI)
// Long-term variable cash compensation (LTI)
// Pension installment or service cost according to IFRS for pension entitlement.

Compliance with the specified thresholds for the maximum total compensation of Board of Management members cannot be reported on conclusively until all compensation components granted for a given fiscal year have been paid out. This means that for fiscal 2021, this can only be reported on after expiration of the four-year performance period for the 2021 tranche of the LTI, which ends on December 31, 2024. Compensation affected by this cap will only be paid out up to this maximum threshold. Any compensation that exceeds this threshold becomes null and void.

Maximum total compensation pursuant to Section 87a, Paragraph 1, Sentence 2, No. 1 AktG applies to compensation granted since fiscal 2020. Compliance with the maximum total compensation threshold for 2021 will be reported on in the 2024 Compensation Report after the performance period for the 2021 tranche of the LTI has ended.

Setting compensation levels

The Supervisory Board regularly reviews the individual compensation levels on the basis of the compensation system. This annual review takes into account the company's economic position, the overall market development and the development of compensation within the Bayer Group. The Supervisory Board places importance on ensuring the Board of Management members receive an appropriate level of compensation in the competitive environment. To review the appropriateness of compensation, the Human Resources Committee prepares a horizontal and a vertical comparison of compensation and, if necessary, is supported in this task by an external, independent compensation consultant.

Horizontal appropriateness in this context involves taking into account the levels of management board compensation at comparable companies in Germany and international companies from the same industry. Vertical appropriateness in this context means taking into account the compensation structures within the Bayer Group and, in particular, how they have developed over time.

Horizontal comparison

The DAX 30 companies (excluding financial service providers) were previously taken as a guide when setting compensation levels. Since the reform of the DAX on September 20, 2021, the benchmark applied now encompasses all DAX 40 companies, as well as international competitors that are comparable in terms of size and industry. The Supervisory Board aims to offer Board of Management members a compensation package that is in line with market rates and at the same time competitive while remaining within the regulatory framework.

The DAX companies are a suitable primary comparison group, especially in terms of the aspects of size and country. Bayer's economic position is factored in by regularly reviewing the company's relative positioning in the DAX in terms of size. On this basis, Bayer aims to ensure its relative positioning within the DAX is in the top third in terms of 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.

Bayer's relative positioning in terms of size is determined based on the criteria sales, employee numbers and market capitalization.

The international comparison group is taken into account as an additional indicator to validate the competitiveness of Board of Management compensation on an international level, too. In 2021, the international comparison group comprised the following companies:

C 2.1/4

International Comparison Group for Board of Management Compensation			
// AstraZeneca	// BASF	// Bristol Myers Squibb	// Corteva
// FMC Corp	// GlaxoSmithKline	// Johnson & Johnson	// Merck & Co.
// Novartis	// Novo Nordisk	// Nutrien	// Pfizer
// Reckitt Benckiser	// Roche	// Sanofi	// Takeda

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 the first management level below the Board of Management, managerial employees up to the second management level below the Board of Management, the workforce and nonmanagerial employees in Germany. Here, the Supervisory Board compares the average target direct compensation of the Group's Board of Management with the average target direct compensation of various management levels and the workforce as a whole. Both the current ratios and the changes in ratios over time are taken into account.

Findings of the compensation review in 2021
To ensure that the members of the Board of Management of Bayer AG receive a compensation package within the regulatory framework that is in line with the market and at the same time competitive, compensation levels are reviewed annually and adjusted where appropriate, while also taking into account size criteria over time.

Target direct compensation comprises base compensation and the target amounts of short- and long-term variable cash compensation.

As part of the most recent review, the Supervisory Board decided to recalibrate the target amounts of the variable compensation elements that form part of the compensation structure established in the compensation system in favor of long-term variable cash compensation. This aligns the Board of Management compensation structure even more closely with the company's long-term performance and the development of its share price, thus ensuring greater orientation toward the interests of our stockholders. Effective January 1, 2022, the target amounts for the long-term variable cash compensation of all members of the Board of Management were increased from 150% to 160% of base compensation, and the target amounts for short-term variable cash compensation were reduced from 100% to 90% of base compensation.

From 2022, the compensation structure will be aligned even more strongly toward long-term variable cash compensation, which will help to more closely link Board of Management compensation to stock performance and sustainability.

2.2 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 that is paid out in monthly 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.

Variable cash compensation

The design of the variable compensation components and the established performance criteria are in complete conformity with the Board of Management compensation system that was approved by the 2020 Annual Stockholders' Meeting.

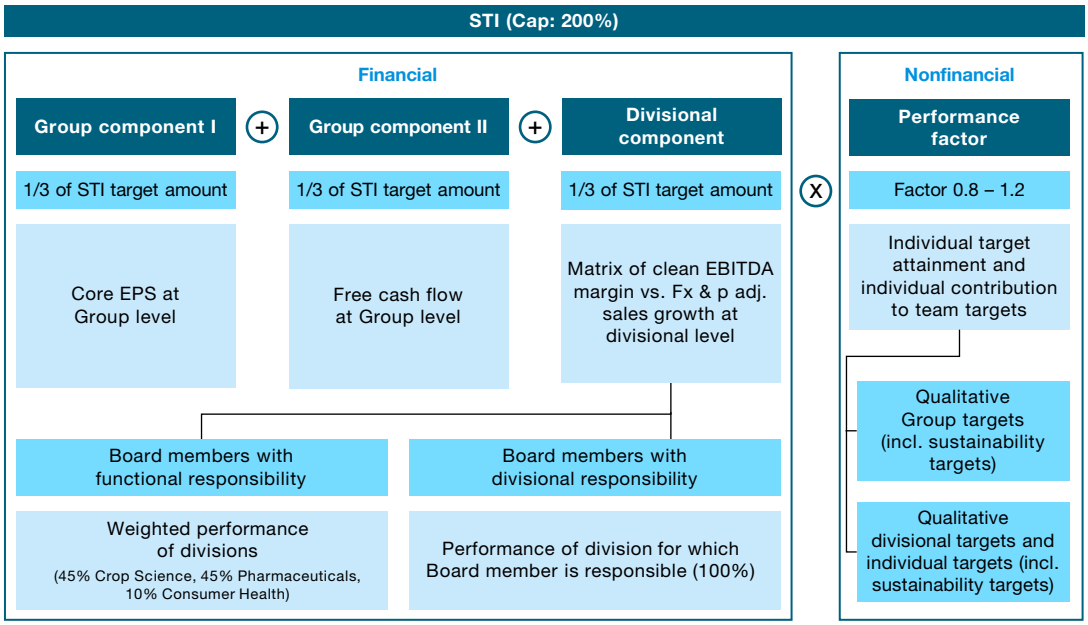
Short-term variable cash compensation (STI)

The short-term variable cash compensation depends on the success of the business in the respective year. It incentivizes operational success and 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 STI target value amounts to 100% of base compensation (from 2022: 90% of base compensation). The level of the STI payout is based on each member's contractually agreed individual target amount, the target attainment for the three financial components, and the individual performance factor. Depending on the company's success, the target attainment 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.

The key performance indicators in the STI are the same as those used in Bayer's corporate management.

C 2.2/1

Components of Short-Term Variable Cash Compensation (STI)



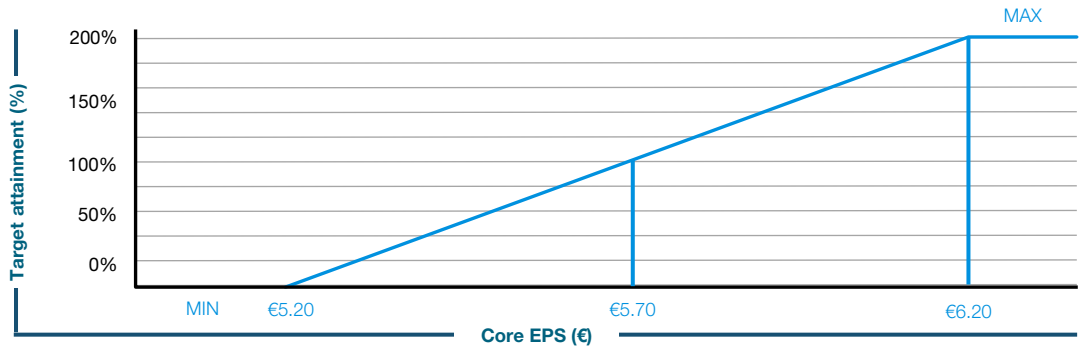
Group component I

Group component I is derived from core earnings per share (core EPS) at Group level, which forms the basis of our dividend policy. Using core EPS for this component therefore 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 value and a maximum value for core EPS ("benchmarks"). The target value 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 value previously set for that year. If the target value has been achieved, target attainment is 100%. If the target attainment is above or below the target value, the target attainment corresponds to a target function within an interval of 0% to 200%.

The graphic below shows the minimum value, target value and maximum value for core EPS in 2021:

C 2.2/2

Payout Curve for Core EPS



For fiscal 2021, the core EPS target for Group component I was set at €5.70 at the start of the year at the closing rates as of December 31, 2020 (corresponding to €6.20 at the average exchange rates in 2020). Actual core EPS came in at €6.51, corresponding to a target attainment level of 200%.

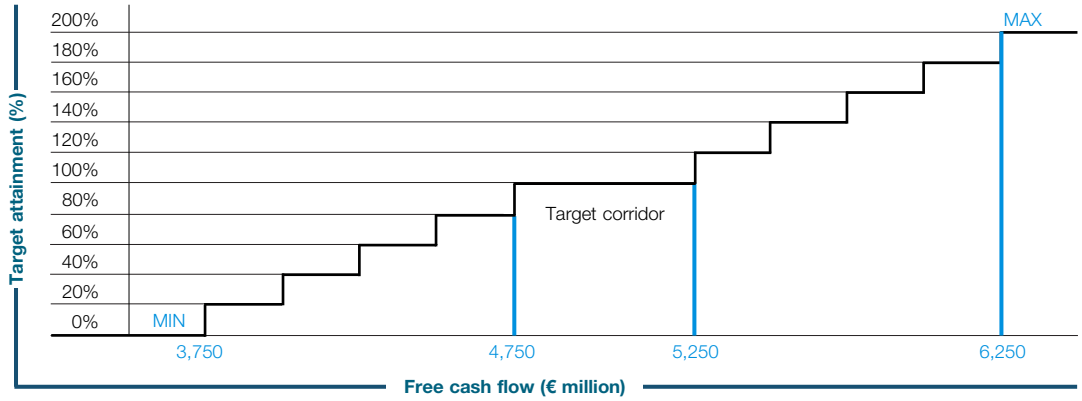
Group component II

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. The Supervisory Board determines whether this corridor is sufficiently ambitious, too, and adjusts it if necessary. The payments in connection with the settlement agreements reached in the glyphosate, dicamba, PCB and Essure™ litigations constituted significant nonrecurring extraordinary effects and were not taken into account. They therefore had no impact on target attainment. 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%.

The graphic below shows the minimum value, target corridor and maximum value for free cash flow in 2021:

C 2.2/3

Payout Curve for Free Cash Flow



For fiscal 2021, the target corridor set for Group component II at the start of the year was €4.75 billion to €5.25 billion.

In accordance with the Board of Management compensation system approved by the 2020 Annual Stockholders' Meeting, 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 only be allowed for differently, when the target was set, and that are considered irrelevant to performance with respect to the STI.

Disregarding the settlement payments mentioned above, free cash flow came in at €5,625 million, corresponding to a target attainment level of 140%.

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. 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 a minimum value, a target value and a maximum value for each division's EBITDA margin before special items and for 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. Failure to meet one of the two minimum values results in a target attainment level of 0% for the divisional component. Target attainment levels above 100% can occur if, for example, one target value is met and the other is exceeded, or if both target values are exceeded.

C 2.2/4

STI Payout Matrix for the 2021 Financial Targets of the Divisions

					EBITDA margin before special items				
					Minimum value		Target value		Maximum value
				CS	21.3%	…	22.3%	…	24.3%
				PH	30.6%	…	31.6%	…	33.6%
				CH	21.5%	…	22.5%	…	24.5%
		CS	PH	CH					
	Minimum value	−0.7%	+0.4%	+0.9%	0%	…	50%	…	150%
		…	…	…	…	…	…	…	…
Sales growth (Fx & p. adj.)	Target value	+1.8%	+2.9%	+3.4%	50%	…	100%	…	200%
		…	…	…	…	…	…	…	…
	Maximum value	+6.8%	+7.9%	+8.4%	150%	…	200%	…	200%

Fx & p. adj. = currency- and portfolio-adjusted; CS = Crop Science; PH = Pharmaceuticals; CH = Consumer Health

The currency- and portfolio-adjusted sales growth and EBITDA margin before special items achieved by the divisions in 2021 were as follows:

Crop Science

// Sales growth vs. 2020 (Fx & portfolio adj.):	Actual figure:	+11.0%[2]
// EBITDA margin before special items:	Actual figure:	23.2%
// Overall target attainment therefore amounted to 200.0% (maximum level).		

Pharmaceuticals

// Sales growth vs. 2020 (Fx & portfolio adj.):	Actual figure:	+7.3%[2]
// EBITDA margin before special items:	Actual figure:	31.5%
// Overall target attainment therefore amounted to 176.0%.		

Consumer Health

// Sales growth vs. 2020 (Fx & portfolio adj.):	Actual figure:	+5.7%[2]
// EBITDA margin before special items:	Actual figure:	22.5%
// Overall target attainment therefore amounted to 139.1%.		

This resulted in a target attainment level of 183.1% for Board of Management members with functional responsibility.

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 targets. The attainment of the nonfinancial targets, such as innovation progress or safety, compliance and sustainability goals, is also taken into account. The multiplier applied to the attainment of the financial targets can range from 0.8 and 1.2 for each individual Board of Management member.

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 2021 and approved by the Supervisory Board. The following table provides an overview of the subject areas. For 2021, the team targets were achieved and in many cases surpassed.

[2] Due to the hyperinflation-related growth in Argentina, currency- and portfolio-adjusted sales growth was adjusted by minus 0.1 percentage points for Crop Science and Pharmaceuticals, and by minus 0.8 percentage points for Consumer Health.

C 2.2/5

Team Targets for 2021

Subject area	

Alignment against growth markets	// Consumer Health: Grow market share ahead of multinational peers, and sustain growth in North America and EMEA
	// Crop Science: Grow sales in line with market, stabilize soybeans business and defend core businesses
	// Pharmaceuticals: Maximize business performance before loss of exclusivity, and launch late-stage pipeline

Innovation powered by science	// Consumer Health: Further develop and deliver value from enhanced innovation pipeline
	// Crop Science: Drive core innovation projects, and develop new and substantial value pools
	// Pharmaceuticals: Reinvigorate innovation model, and manage change in Research & Development (R&D) leadership
	// Leaps by Bayer: Drive breakthrough innovation by leveraging new scientific insights and technologies with Leaps

Excellence in execution	// Consumer Health: Continue to deliver execution excellence through Fit to Win (FTW) 2.0, and accelerate global digital agenda
	// Crop Science: Increase resilience and agility, and accelerate integration synergies
	// Pharmaceuticals: Implement True North strategy and successfully re-enter North American market
	// Enabling Functions: Advance major projects in Production and IT; intensify Investor Relations output, and resolve glyphosate litigations

Commitment to sustainability	// Further drive implementation of sustainability strategy in divisions and enabling functions
	// Accelerate progress on sustainability ambitions
	// Drive sustainability communication and engagement, and improve reputation (internally and externally)

Advance inclusion and diversity; employee development	// Advance inclusion and diversity and fully integrate into talent and development
	// Upskill workforce to enable digital transformation
	// Enhance employee experience and simplify processes to accelerate decision-making

In accordance with a resolution of the Human Resources Committee and the Supervisory Board, all members of the Board of Management are also 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 individual performance targets agreed upon for 2021 and the attainment thereof.

C 2.2/6

Individual Targets Agreed for 2021 and Attainment Levels

Board of Management member	Subject areas for individual targets	Target attainment – team and individual targets

Werner Baumann	// Implement sustainability strategy
	// Defend the glyphosate litigations
	// Implement the Bayer 2022+ project
	// Ensure effective stockholder engagement
		104%

Liam Condon	// Integrate sustainability strategy in the division's strategy
	// Implement key innovation projects
	// Develop digital business processes
	// Increase business growth and sales
		100%

Sarena Lin (since February 1st, 2021)	// Upskill employees to keep pace with the digital transformation
	// Promote inclusion and diversity and fully integrate into talent development
	// Grow into role of Labor Director
	// Onboarding in the newly formed Board position for Talent, Strategy and Business Consulting
		95%

Wolfgang Nickl	// Steer operations to attain financial KPIs
	// Further define and implement Bayer 2022+ project
	// Drive forward digitalization
	// Pursue the platform philosophy in the enabling functions
		104%

Stefan Oelrich	// Further implement the goals of the "True North Now" strategy
	// Integrate sustainability strategy in the division's strategy
	// Launch new products
	// Drive forward the innovation and research model
		100%

Heiko Schipper	// Strengthen the portfolio
	// Further implement the "Fit to Win" program
	// Integrate sustainability strategy in the division's strategy
	// Accelerate digitalization
		108%

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.

Payment of the short-term variable compensation (STI)

The STI is paid out on the earliest possible date of the following year and is calculated as follows for 2021:

C 2.2/7

Short-Term Variable Compensation in 2021 at a Glance

		Target attainment					
	Target amount (€)[1]	Group component I	Group component II	Divisional component	Individual performance factor[2]	Total	Payout amount (€)
Werner Baumann	1,775,000	200.0%	140.0%	183.1%	1.04	181.3%	3,218,075
Liam Condon	964,300			200.0%	1.00	180.0%	1,735,740
Sarena Lin (since Feb. 1, 2021)	825,000			183.1%	0.95	165.6%	1,366,200
Wolfgang Nickl	900,000			183.1%	1.04	181.3%	1,631,700
Stefan Oelrich	930,000			176.0%	1.00	172.0%	1,599,600
Heiko Schipper	900,000			139.1%	1.08	172.5%	1,552,500

[1] The STI target amount was only reduced for Sarena Lin on a pro rata temporis basis as she joined the Board of Management during the year.
[2] The individual performance factor for Liam Condon was determined as part of his termination agreement, as per the terms contained therein.

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.

See the "Share Ownership Guidelines" section for more detailed information on personal investment in Bayer stock.

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 shareholder 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.

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, the Aspire tranche allocated 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 allocated for previous years continue unchanged.

The following table provides an overview of target attainment levels for the 2018 and 2017 Aspire 2.0 tranches (expired in 2021 and 2020, respectively) including the starting and final 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:

More detailed information on the payout from the 2018 tranche can be found in the overview table showing ongoing LTI tranches.

C 2.2/8

Aspire Payout Percentages

	2017 tranche	2018 tranche
Bayer stock starting price[1]	€91.92	€104.91
Bayer stock final price	€47.99	€46.37
Bayer stock performance	**–47.79%**	**–55.80%**
EURO STOXX 50 starting value	3,156.0	3,566.8
EURO STOXX 50 final value	3,520.5	4,207.8
EURO STOXX 50 performance	**+11.55%**	**+17.97%**
Dividend equivalent	**€11.02**	**€10.36**
Payout percentage	**38.09%**	**31.97%**

[1] The starting price was modified by a factor of 0.98409496 due to the capital measure implemented on June 6, 2018.

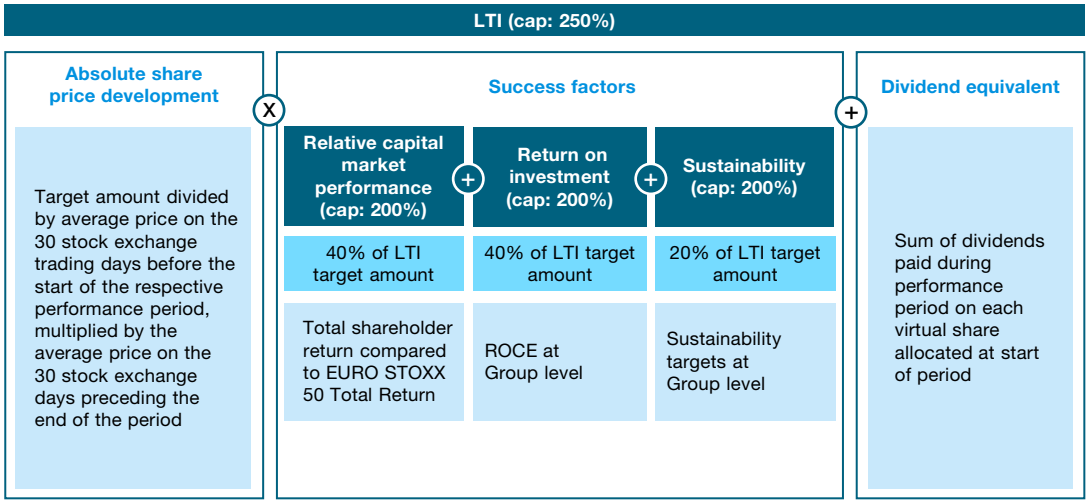
Aspire 3.0 tranches issued each year from 2020

The annual Aspire 3.0 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% (160% for all LTI tranches allocated from 2022) 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.

Starting with the 2021 tranche, 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 40%, and the performance criterion of sustainability, with a weighting of 20%. Depending on the company's success, the target attainment levels for the three 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 target amount. The components of the long-term variable cash compensation (LTI) are shown in the graphic below.

C 2.2/9

Components of Term Variable Cash Compensation (LTI)



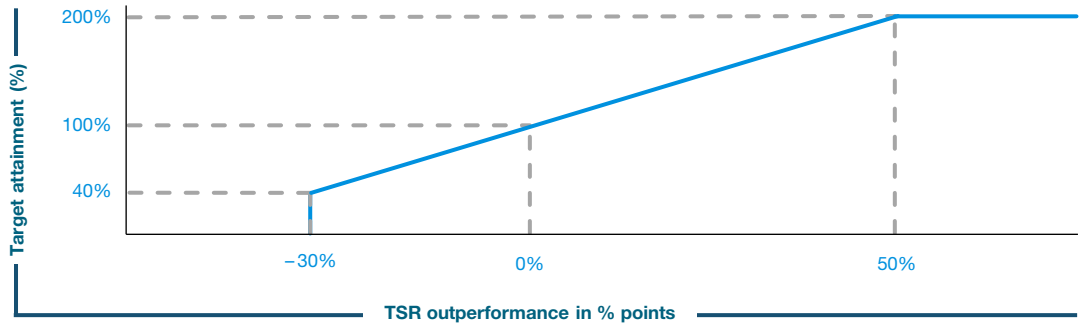
Relative capital market performance

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 relative share price development and hypothetically reinvested gross dividends. This takes account of Bayer's capital market performance 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 percentage points, target

attainment is 0%. If the difference equals –30 percentage points, target attainment is 40%. If the difference is +50 percentage points or more, target attainment is 200%. The payout curve for the relative TSR target is given in the graphic below.

C 2.2/10

Payout Curve for Relative TSR



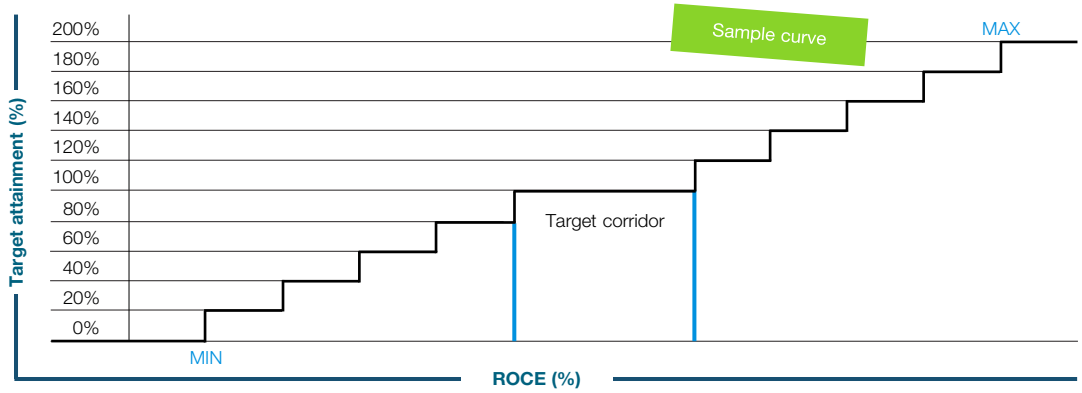
Return on investment

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 ROCE. The minimum value is based on the weighted average cost of capital (WACC) on the date the respective tranche is issued. 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 is illustrated in the graphic below. The actual payout curve and target attainment level are published in the corresponding Compensation Report following the end of the four-year performance period, along with, where applicable, information on any adjustments the Supervisory Board makes to the ROCE and the reasoning behind them.

C 2.2/11

Payout Curve for ROCE



Sustainability

For the 2021 LTI tranche, the Supervisory Board for the first time defined specific sustainability goals for the four-year performance period. Sustainability goals at both divisional and Group level can be taken into account. In setting the sustainability goals, the Supervisory Board took care to ensure that these are measurable and transparent, and in doing so was guided by the goals contained in the Bayer sustainability strategy. All of the sustainability goals below are taken into account with the same weighting. The Supervisory Board also set 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 a target function within an interval of 0% to 200%.

Since 2021, sustainability targets have been taken into account with a weighting of 20%. The focus here is on helping people in LMICs and reducing greenhouse gas emissions.

C 2.2/12

Nonfinancial Group Targets Through 2030

Target[1]	Target for 2030
Number of smallholder farmers in low- and middle-income countries (LMICs) supported by products, services and partnerships	100 million
Number of women in low- and middle-income countries (LMICs) who have their need for modern contraception satisfied due to interventions supported by Bayer	100 million
Number of people in underserved[2] communities whose self-care is supported by interventions from Bayer	100 million
Scope 1 and 2[3] greenhouse gas emissions	42% decrease[4, 6]
Scope 3 greenhouse gas emissions from relevant[7] categories	12.3% decrease[5, 6]
Off-setting of remaining Scope 1 and 2 greenhouse gas emissions	100%

[1] A more detailed description of the calculation methodologies is published on our website www.bayer.com/en/sustainability.
[2] Economically or medically
[3] Covering Scope 1 and 2 emissions (market-based) of sites that have an energy consumption in excess of 1.5 terajoules
[4] Corresponding to the sustainability target of limiting global temperature rise to 1.5°C above pre-industrial level
[5] Corresponding to the sustainability target of limiting global temperature rise below 2°C above pre-industrial level
[6] By the end of 2029
[7] 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

The setting of the individual sustainability goals and target attainment will be reported on in the corresponding Compensation Report following the end of the performance period. Where applicable, any adjustments the Supervisory Board makes to sustainability target values will also be explained, along with the reasons behind those changes. Target attainment will be determined by the Supervisory Board and will be reviewed by an external auditor.

Ongoing tranches of long-term variable cash compensation (LTI)

Aspire 2.0 and 3.0 tranches are paid out at the earliest possible date following the end of the respective four-year performance period.

The performance period for the 2018 Aspire 2.0 tranche ended on December 31, 2021.

The following table provides an overview of the ongoing tranches of the current members of the Board of Management of Bayer AG in 2021:

C 2.2/13

Overview of LTI Tranches of Board of Management Members Serving as of Dec. 31, 2021

Overview of LTI tranches allocated

		Target amount (€ thousand)	Bayer stock starting price (€)	No. of conditionally allocated virtual shares[2]	Target attainment for performance component[3]	Bayer stock final price (€)	Total dividends per virtual share (€)	Payout percentage	Payout amount[4] (€ thousand)
2018 Aspire 2.0 tranche[1] (Jan. 1, 2018 – Dec. 31, 2021)	Werner Baumann	2,039	104.91	19,439	–50%	46.37	10.36	31.97%	652
	Liam Condon	793		7,556					253
	Wolfgang Nickl	1,056		10,067					338
	Stefan Oelrich	973		9,274					311
	Heiko Schipper	1,104		10,525					353
2019 Aspire 2.0 tranche (Jan. 1, 2019 – Dec. 31, 2022)	Werner Baumann	2,804	63.08	44,454	The performance period of the 2019 Aspire 2.0 tranche will end on Dec. 31, 2022				
	Liam Condon	1,841		29,187					
	Wolfgang Nickl	1,319		20,912					
	Stefan Oelrich	1,226		19,431					
	Heiko Schipper	1,181		18,721					
2020 Aspire 3.0 tranche (Jan. 1, 2020 – Dec. 31, 2023)	Werner Baumann	2,502	69.95	35,773	The performance period of the 2020 Aspire 3.0 tranche will end on Dec. 31, 2023				
	Liam Condon	1,441		20,597					
	Wolfgang Nickl	1,194		17,069					
	Stefan Oelrich	1,274		18,206					
	Heiko Schipper	1,194		17,069					
2021 Aspire 3.0 tranche (Jan. 1, 2021 – Dec. 31, 2024)	Werner Baumann	2,513	47.99	52,352	The performance period of the 2021 Aspire 3.0 tranche will end on Dec. 31, 2024				
	Liam Condon	1,446		30,141					
	Sarena Lin	1,174		24,460					
	Wolfgang Nickl	1,199		24,980					
	Stefan Oelrich	1,279		26,643					
	Heiko Schipper	1,199		24,980					

[1] The starting price was modified by a factor of 0.98409496 due to the capital measure implemented on June 6, 2018.

[2] The number of conditionally allocated virtual shares is determined by dividing the LTI target amount by the average share price over the preceding 30 stock exchange trading days before the tranche is issued.

[3] Target attainment for Aspire 2.0 is based on Bayer's stock performance relative to the EURO STOXX 50. This increases or decreases the payout by the percentage of overperformance or underperformance, respectively, but by no more than 50 percentage points either way. Target attainment for Aspire 3.0 is based on weighted target attainment for the three performance criteria "Relative capital market performance", "Return on investment" and (since fiscal 2021) "Sustainability".

[4] Shown here is the amount actually paid out. Due to system-related rounding differences, the parameters shown here may result in a payout amount that deviates from the sum actually paid out.

In line with the recommendation of the German Corporate Governance Code, already allocated LTI tranches are paid out according to the originally agreed targets at the end of the contractually specified performance period should a Board of Management member's service contract be terminated. The following table shows the ongoing tranches of the former members of the Board of Management of Bayer AG:

C 2.2/14

Overview of LTI Tranches of Former Board of Management Members

Overview of LTI tranches allocated

		Target amount (€ thousand)	Bayer stock starting price (€)	No. of conditionally allocated virtual shares[2]	Target attainment for performance component[3]	Bayer stock final price (€)	Total dividends per virtual share (€)	Payout percentage	Payout amount[4] (€ thousand)
2018 Aspire 2.0 tranche[1] (Jan. 1, 2018 – Dec. 31, 2021)	Johannes Dietsch	432	104.91	4,118	–50%	46.37	10.36	31.97%	138
	Dr. Hartmut Klusik	864		8,237					276
	Kemal Malik	923		8,795					295
	Erica Mann	578		5,513					185
	Dieter Weinand	1,031		9,830					330
2019 Aspire 2.0 tranche (Jan. 1, 2019 – Dec. 31, 2022)	Dr. Hartmut Klusik	1,240	63.08	19,658	The performance period of the 2019 Aspire 2.0 tranche will end on Dec. 31, 2022				
	Kemal Malik	1,253		19,867					
2020 Aspire 3.0 tranche (Jan. 1, 2020 – Dec. 31, 2023)	Kemal Malik	1,190	69.95	17,008	The performance period of the 2020 Aspire 3.0 tranche will end on Dec. 31, 2023				
2021 Aspire 3.0 tranche (Jan. 1, 2021 – Dec. 31, 2024)	Kemal Malik	1,285	47.99	26,775	The performance period of the 2021 Aspire 3.0 tranche will end on Dec. 31, 2024				

[1] The starting price was modified by a factor of 0.98409496 due to the capital measure implemented on June 6, 2018.
[2] The number of conditionally allocated virtual shares is determined by dividing the LTI target amount by the average share price over the preceding 30 stock exchange trading days before the tranche is issued.
[3] Target attainment for Aspire 2.0 is based on Bayer's stock performance relative to the EURO STOXX 50. This increases or decreases the payout by the percentage of overperformance or underperformance, respectively, but by no more than 50 percentage points either way. Target attainment for Aspire 3.0 is based on weighted target attainment for the three performance criteria "Relative capital market performance", "Return on investment" and (since fiscal 2021) "Sustainability".
[4] Shown here is the amount actually paid out. Due to system-related rounding differences, the parameters shown here may result in a payout amount that deviates from the sum actually paid out.

Pension entitlement/installment

The introduction of a pension installment is in step with the increased transparency and simplification of the compensation system.

Members of the Board of Management appointed after January 1, 2020, are not entitled to a 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.

Members of the Board of Management appointed prior to January 1, 2020, 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 on fixed annual 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 is comprised of 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.

The current service cost for the pension entitlements of the Board of Management members recognized in 2021 according to IFRS was €3,800 thousand (2020: €3,375 thousand). The following table shows the service cost according to IFRS and the settlement or present value of the pension obligations attributable to the individual members of the Board of Management.

C 2.2/15

Pension Entitlements According to IFRS

	Expense[1]		Present value of defined benefit pension obligation as of Dec. 31	
€ thousand	2020	2021	2020	2021
Serving Board of Management members as of Dec. 31, 2021				
Contribution-based pension entitlements				
Werner Baumann (Chairman)	1,895	2,088	25,019	26,654
Liam Condon	702	784	7,188	7,648
Wolfgang Nickl	257	325	877	1,144
Stefan Oelrich	271	344	753	1,042
Heiko Schipper	250	259	6,086	7,243

[1] In the case of the contribution-based pension entitlements, the figures shown here pertain to the service cost for pension entitlements according to IFRS.

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.

In 2021, the Supervisory Board did not see any cause to reduce any variable compensation that had not yet been paid out (malus) or reclaim variable compensation that had already been paid out (clawback).

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.

An overview of the current Share Ownership Guidelines can be found below:

C 2.2/16

Share Ownership Guidelines – Status

Serving Board of Management members as of Dec. 31, 2021

Board of Management member	Target (% of base compensation)	End of position-building phase	Status
Werner Baumann	200%	March 31, 2021[1]	Fulfilled
Liam Condon	100%	March 31, 2021[1]	Fulfilled
Sarena Lin	100%	January 31, 2025	In progress
Wolfgang Nickl	100%	April 25, 2022	Fulfilled
Stefan Oelrich	100%	October 31, 2022	Fulfilled
Heiko Schipper	100%	February 28, 2022	Fulfilled

[1] The end dates for the position-building phase were redefined after the targets within the Share Ownership Guidelines were updated in 2020.

Entitlements upon termination of service on the Board of Management

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
- // 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. Board of Management members appointed in 2010 or earlier are entitled 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.

A severance payment made in the event of a change of control would also fall below the severance cap recommended by the German Corporate Governance Code (two times the level of annual compensation, but capped at the compensation amount for the remaining term of the contract).

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. If a Board of Management member 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), the Supervisory Board may terminate his or her service contract early.

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. No deductions are being made for Board of Management members currently serving on external supervisory boards.

Third-party compensation

No member of the Board of Management received compensation from a third party in 2021 in connection with their position on the Board of Management.

2.3 Individualized Board of Management compensation levels

Target compensation (voluntary disclosure)

The following tables show the individual target values, along with the minimum and maximum values, for the compensation components contractually agreed in 2021, including expenses for fringe benefits and pension entitlements, along with the relative shares of the individual compensation components.

C 2.3/1

Target Compensation (Part I)

	Serving Board of Management members as of Dec. 31, 2021									
	Werner Baumann (Chairman)					Liam Condon (Crop Science)				
	Joined Jan. 1, 2010					Joined Jan. 1, 2016				
	2021 (€ thousand)	2021 (%)	Min. 2021 (€ thousand)	Max.[1] 2021 (€ thousand)	2020 (€ thousand)	2021 (€ thousand)	2021 (%)	Min. 2020 (€ thousand)	Max.[1] 2021 (€ thousand)	2020 (€ thousand)
Base compensation	1,733	21.1	1,733	1,733	1,668	964	22.7	964	964	961
Fringe benefits	99	1.2	99	99	59	95	2.2	95	95	47
Pension installment	–	–	–	–	–	–	–	–	–	–
Short-term variable cash compensation										
STI 2020	–	–	–	–	1,668	–	–	–	–	961
STI 2021	1,775	21.6	0	3,550	–	964	22.7	0	1,929	–
Long-term stock-based cash compensation										
Aspire 3.0 2020 (Jan. 1, 2020 – Dec. 31, 2023)	–	–	–	–	2,502	–	–	–	–	1,441
Aspire 3.0 2021 (Jan. 1, 2021 – Dec. 31, 2024)	2,513	30.6	0	6,281	–	1,446	34.0	0	3,616	–
Service cost/benefit expense (IFRS)	2,088	25.5	2,088	2,088	1,895	784	18.4	784	784	702
Total compensation	**8,208**	**100.0**	**3,920**	**13,751**	**7,792**	**4,253**	**100.0**	**1,843**	**7,388**	**4,112**

C 2.3/2

Target Compensation (Part II)

	Serving Board of Management members as of Dec. 31, 2021									
	Sarena Lin[2] (Labor Director)					Wolfgang Nickl (Finance)				
	Joined Feb. 1, 2021					Joined April 26, 2018				
	2021 (€ thousand)	2021 (%)	Min. 2021 (€ thousand)	Max.[1] 2021 (€ thousand)	2020 (€ thousand)	2021 (€ thousand)	2021 (%)	Min. 2020 (€ thousand)	Max.[1] 2021 (€ thousand)	2020 (€ thousand)
Base compensation	758	17.5	758	758	–	824	23.9	824	824	796
Fringe benefits	1,282	29.5	1,198	1,623	–	202	5.9	202	202	91
Pension installment	303	7.0	303	303	–	–	–	–	–	–
Short-term variable cash compensation										
STI 2020	–	–	–	–	–	–	–	–	–	796
STI 2021	825	19.0	0	1,650	–	900	26.1	0	1,800	–
Long-term stock-based cash compensation										
Aspire 3.0 2020 (Jan. 1, 2020 – Dec. 31, 2023)	–	–	–	–	–	–	–	–	–	1,194
Aspire 3.0 2021 (Jan. 1, 2021 – Dec. 31, 2024)	1,174	27.0	0	2,935	–	1,199	34.8	0	2,998	–
Service cost/benefit expense (IFRS)	–	–	–	–	–	325	9.3	325	325	257
Total compensation	**4,342**	**100.0**	**2,259**	**7,269**	**–**	**3,450**	**100.0**	**1,351**	**6,149**	**3,134**

C 2.3/3

Target Compensation (Part III)

	Serving Board of Management members as of Dec. 31, 2021									
	Stefan Oelrich[3] (Pharmaceuticals)					Heiko Schipper[4] (Consumer Health)				
	Joined Nov. 1, 2018					Joined Mar. 1, 2018				
	2021 (€ thousand)	2021 (%)	Min. 2021 (€ thousand)	Max.[1] 2021 (€ thousand)	2020 (€ thousand)	2021 (€ thousand)	2021 (%)	Min. 2020 (€ thousand)	Max.[1] 2021 (€ thousand)	2020 (€ thousand)
Base compensation	872	20.3	872	872	849	824	22.7	824	824	796
Fringe benefits	861	20.1	861	861	860	443	12.2	443	443	594
Pension installment	–	–	–	–	–	–	–	–	–	–
Short-term variable cash compensation										
STI 2020	–	–	–	–	849	–	–	–	–	796
STI 2021	930	21.7	0	1,860	–	900	24.8	0	1,800	–
Long-term stock-based cash compensation										
Aspire 3.0 2020 (Jan. 1, 2020 – Dec. 31, 2023)	–	–	–	–	1,274	–	–	–	–	1,194
Aspire 3.0 2021 (Jan. 1, 2021 – Dec. 31, 2024)	1,279	29.8	0	3,196	–	1,199	33.1	0	2,997	–
Service cost/benefit expense (IFRS)	344	8.1	344	344	271	259	7.2	259	259	250
Total compensation	**4,286**	**100.0**	**2,077**	**7,133**	**4,103**	**3,625**	**100.0**	**1,526**	**6,323**	**3,630**

[1] The maximum figures shown here do not yet take into account the total caps applicable (see C 2.1/3).
[2] The fringe benefits for Sarena Lin include buyout amounts for lapsed entitlements to bonuses granted by her former employer, and the reimbursement of costs incurred for selling her home in the United States, with a cap applying in each case.
[3] The fringe benefits for Stefan Oelrich contain an indemnity payment of €808 thousand (2020: €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 was 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 €431 thousand (2020: €530 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 was paid over a period of three years on a pro rata temporis basis.

Compensation awarded and due

The following tables show the compensation individually awarded and due. The tables include all fixed (base compensation, fringe benefits, and pension entitlements/installment) and variable (short- and long-term variable cash compensation) compensation components along with their respective relative shares for each member of the Board of Management. Awarded compensation encompasses compensation for services that have been fully rendered once the fiscal year ends, even though actual payment will not be made until the subsequent fiscal year. Due compensation comprises compensation that is legally due but has not yet been actually paid out to the Board of Management member.

The way compensation is allocated can be illustrated using the examples of short-term cash compensation (STI) and long-term stock-based cash compensation (Aspire 2.0 and Aspire 3.0):

// The payout amounts for the 2021 STI and the Aspire 2.0 tranche issued in 2018 are included in the column for compensation awarded and due, since the respective Board of Management member had fully rendered the services on which the respective compensation is based during the one- and four-year periods. The fact that the payouts will not actually be made until the subsequent year is overlooked in order to present the link between the compensation and performance of the Board of Management in the same period.

The service cost according to IFRS is additionally shown as a part of Board of Management compensation, even though it does not constitute awarded or due compensation within the meaning of Section 162 of the Stock Corporation Act (AktG).

C 2.3/4

Compensation Awarded and Due (Part I)

	Serving Board of Management members as of Dec. 31, 2021					
	Werner Baumann (Chairman) Joined Jan. 1, 2010			Liam Condon (Crop Science) Joined Jan. 1, 2016		
	2021 (€ thousand)	**2021 (%)**	**2020 (€ thousand)**	**2021 (€ thousand)**	**2021 (%)**	**2020 (€) thousand**
Base compensation	1,733	30.4	1,668	964	11.7	961
Fringe benefits	99	1.7	59	95	1.2	47
Pension installment	–	–	–	–	–	–
Short-term variable cash compensation						
STI 2020	–	–	906	–	–	458
STI 2021	3,218	56.4	-	1,736	21.0	–
Long-term stock-based cash compensation						
Aspire 2.0 2017 (Jan. 1, 2017 – Dec. 31, 2020)	–	–	1,345	–	–	638
Aspire 2.0 2018 (Jan. 1, 2018 – Dec. 31, 2021)	652	11.4	–	253	3.1	–
Other[1]	–	–	–	5,201	63.1	–
Total compensation awarded and due	**5,702**	**100.0**	**3,978**	**8,249**	**100.0**	**2,104**
Service cost/benefit expense (IFRS)	2,088		1,895	784		702
Total compensation	**7,790**		**5,873**	**9,033**		**2,806**

C 2.3/5

Compensation Awarded and Due (Part II)

	Serving Board of Management members as of Dec. 31, 2021					
	Sarena Lin[2] (Labor Director) Joined Feb. 1, 2021			Wolfgang Nickl (Finance) Joined April 26, 2018		
	2021 (€ thousand)	**2021 (%)**	**2020 (€ thousand)**	**2021 (€ thousand)**	**2021 (%)**	**2020 (€ thousand)**
Base compensation	758	20.4	–	824	27.5	796
Fringe benefits	1,282	34.6	–	202	6.7	91
Pension installment	303	8.2	–	–	–	–
Short-term variable cash compensation						
STI 2020	–	–	–	–	–	428
STI 2021	1,366	36.8	–	1,632	54.5	–
Long-term stock-based cash compensation						
Aspire 2.0 2017 (Jan. 1, 2017 – Dec. 31, 2020)	–	–	–	–	–	–
Aspire 2.0 2018 (Jan. 1, 2018 – Dec. 31, 2021)	–	–	–	338	11.3	–
Other	–	–	–	–	–	–
Total compensation awarded and due	**3,709**	**100.0**	**–**	**2,996**	**100.0**	**1,315**
Service cost/benefit expense (IFRS)	–		–	325	–	257
Total compensation	**3,709**		**–**	**3,321**		**1,572**

C 2.3/6

Compensation Awarded and Due (Part III)

	Serving Board of Management members as of Dec. 31, 2021					
			Stefan Oelrich[3] (Pharmaceuticals) Joined Nov. 1, 2018			Heiko Schipper[4] (Consumer Health) Joined Mar. 1, 2018
	2021 (€ thousand)	**2021 (%)**	**2020 (€ thousand)**	**2021 (€ thousand)**	**2021 (%)**	**2020 (€ thousand)**
Base compensation	872	23.9	849	824	26.0	796
Fringe benefits	861	23.6	860	443	14.0	594
Pension installment	–	–	–	–	–	–
Short-term variable cash compensation						
STI 2020	–	–	420	–	–	751
STI 2021	1,600	43.9	–	1,553	48.9	–
Long-term stock-based cash compensation						
Aspire 2.0 2017 (Jan. 1, 2017 – Dec. 31, 2020)	–	–	–	–	–	–
Aspire 2.0 2018 (Jan. 1, 2018 – Dec. 31, 2021)	311	8.5	–	353	11.1	–
Other	–	–	–	–	–	–
Total compensation awarded and due	**3,644**	**100.0**	**2,129**	**3,173**	**100.0**	**2,141**
Service cost/benefit expense (IFRS)	344		271	259		250
Total compensation	**3,988**		**2,400**	**3,432**		**2,391**

[1] Owing to his departure and the supplementary agreement concluded with him, Liam Condon's Aspire compensation for 2019 through 2021 was fully earned as of December 31, 2021, and was thus awarded in 2021. In addition, Liam Condon was awarded an entitlement to a maximum indemnity payment totaling €1,929 thousand that is to be paid out in monthly installments for a period of two years. Pursuant to Section 74c of the German Commercial Code, any compensation that Liam Condon receives in the two years following his departure from Bayer's Board of Management will be deducted from said indemnity payment.

[2] The fringe benefits for Sarena Lin include buyout amounts for lapsed entitlements to bonuses granted by her former employer, and the reimbursement of costs incurred for selling her home in the United States, with a cap applying in each case.

[3] The fringe benefits for Stefan Oelrich contain an indemnity payment of €808 thousand (2020: €808 thousand) for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer.

[4] The fringe benefits for Heiko Schipper contain an indemnity payment of €431 thousand (2020: €530 thousand) for variable compensation components granted to him by his former employer that lapsed due to his joining Bayer.

C 2.3/7

Compensation Awarded and Due to Former Board of Management Members (Part I)

	Dr. Hartmut Klusik Stepped down: Dec 31, 2019		Kemal Malik Stepped down: Dec 31, 2019	
	2021 (€ thousand)	**2021 (%)**	**2021 (€ thousand)**	**2021 (%)**
Long-term stock-based cash compensation[1]	(364)	124.7	(363)	100.0
Pension payments	72	–24.7	–	–
Other compensation	–	–	–	–
Total compensation awarded and due	**(292)**	**100.0**	**(363)**	**100.0**

C 2.3/8

Compensation Awarded and Due to Former Board of Management Members (Part II)

	Johannes Dietsch Stepped down: May 31, 2018		Erica Mann Stepped down: March 31, 2018		Dieter Weinand Stepped down: Oct. 31, 2018	
	2021 (€ thousand)	**2021 (%)**	**2021 (€ thousand)**	**2021 (%)**	**2021 (€ thousand)**	**2021 (%)**
Long-term stock-based cash compensation[1]	(345)	100.0	(282)	100.0	(450)	100.0
Pension payments	–	–	–	–	–	–
Other compensation	–	–	–	–	–	–
Total compensation awarded and due	**(345)**	**100.0**	**(282)**	**100.0**	**(450)**	**100.0**

C 2.3/9

Compensation Awarded and Due to Former Board of Management Members (Part III)

	Dr. Marijn Dekkers Stepped down: April 30, 2016		Prof. Dr. Wolfgang Plischke Stepped down: April 29, 2014		Dr. Richard Pott Stepped down: May 31, 2013	
	2021 (€ thousand)	**2021 (%)**	**2021 (€ thousand)**	**2021 (%)**	**2021 (€ thousand)**	**2021 (%)**
Long-term stock-based cash compensation[1]	–	–	–	–	–	–
Pension payments	650	100.0	439	100.0	612	100.0
Other compensation	–	–	–	–	–	–
Total compensation awarded and due	**650**	**100.0**	**439**	**100.0**	**612**	**100.0**

[1] The figure shown here is the difference between the fair value of the long-term stock-based cash compensation that was originally fully awarded to the Board of Management member when he stepped down, and the actual payout amount in the year in which payment is made.

2.4 Compensation of the Supervisory Board

The Supervisory Board is compensated based on the relevant provisions of the Articles of Incorporation, which were last amended by the resolution adopted at the Annual Stockholders' Meeting on April 27, 2021. The compensation of the Supervisory Board members for the period January 1, 2021, through April 27, 2021, is therefore determined by the provisions of the Articles of Incorporation that applied up until the resolution was passed by the 2021 Annual Stockholders' Meeting, while their compensation for the period April 28, 2021, through December 31, 2021, is determined by the provisions of the Articles of Incorporation that were adopted by the Annual Stockholders' Meeting on April 27, 2021.

Principles applied for Supervisory Board compensation

A company's Supervisory Board is tasked with advising and supervising the Board of Management, which directs the company and its business on its own responsibility. Pursuant to Section 113, Paragraph 1, Sentence 3 of the German Stock Corporation Act (AktG), the compensation of Supervisory Board members should bear a reasonable relation to their tasks and the company's situation. In setting Supervisory Board compensation, consideration should be given to the demands of the office of the Supervisory Board member, the time involved and the responsibility borne by the Supervisory Board members for the company. Appropriate Supervisory Board compensation ensures that a company will remain able to attract outstandingly qualified domestic and international candidates as Supervisory Board members. Supervisory Board compensation thus contributes sustainably to advancing a company's business strategy and to its long-term development.

Design of Supervisory Board compensation

The members of the Supervisory Board receive fixed annual compensation and additional compensation for chairing and membership of Supervisory Board committees, 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. In addition, Supervisory Board members receive an attendance fee each time they take part in a meeting of the Supervisory Board or of a committee.

C 2.4/1

Design of Supervisory Board Compensation

Up until April 27, 2021	Compensation element	From April 28, 2021
• Chairman: €396,000 • Vice Chairman: €264,000 • Ordinary member: €132,000	Fixed compensation	• Chairman: €480,000 • Vice Chairman: €320,000 • Ordinary member: €160,000
• Chairman and Vice Chairman of the Supervisory Board do not receive any additional compensation for membership or chairing of committees • Compensation for committee duties is paid for a maximum of two committees (highest-paying functions taken into account)	Compensation for committee duties	• Chairman and Vice Chairman of the Supervisory Board do not receive any additional compensation for membership or chairing of committees • Compensation for committee duties is paid for a maximum of three committees (highest-paying functions taken into account)
• Chairman: €132,000 • Member: €66,000	Audit Committee	• Chairman: €120,000 • Member: €60,000
• Chairman: €66,000 • Member: €33,000	Presidial Committee	• Chairman: €40,000 • Member: €20,000
• Chairman: - • Member: -	Nominations Committee	• Chairman: €40,000 • Member: €20,000
• Chairman: €66,000 • Member: €33,000	Other committees	• Chairman: €60,000 • Member: €30,000
• €1,000 (for each meeting attended in person)[1]	Attendance fees	• €1,500 (for each meeting attended in person, by phone or virtually)[1]

[1] If multiple meetings are held on one day, only one attendance fee is paid.

The members of the Supervisory Board have given a voluntary pledge that in the first five years of their Supervisory Board membership 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. 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. By voluntarily pledging to invest in and hold Bayer shares, the Supervisory Board members reinforce their interest in the company's long-term success.

The tables below show the components of the compensation awarded and due to each Supervisory Board member as well as the relative shares of the respective components in overall compensation. Awarded compensation encompasses compensation for services that have been fully rendered once the fiscal year ends.

Compensation awarded and due

C 2.4/2

Compensation Awarded and Due (Part I)

	Fixed compensation			Compensation for committee duties		
	2021		2020	2021		2020
Supervisory Board members serving as of Dec. 31, 2021	(€ thousand)	(%)	(€ thousand)	(€ thousand)	(%)	(€ thousand)
Dr. Paul Achleitner	151	63.7	132	75	31.6	66
Dr. Simone Bagel-Trah	151	86.8	132	14	8.0	–
Horst Baier[1]	151	46.9	89	154	47.8	112
Dr. Norbert W. Bischofberger	151	78.6	132	30	15.6	33
André van Broich	151	61.1	132	82	33.2	66
Ertharin Cousin	151	83.0	132	20	11.0	–
Dr. Thomas Elsner	151	58.1	132	92	35.4	99
Colleen A. Goggins	151	72.6	132	45	21.6	33
Robert Gundlach	151	78.6	132	30	15.6	2
Heike Hausfeld	151	79.1	132	31	16.2	33
Reiner Hoffmann	151	94.4	132	–	0.0	–
Dr. Fei-Fei Li[2]	109	93.2	–	–	0.0	–
Frank Löllgen	151	61.4	132	83	33.7	66
Petra Reinbold-Knape	151	68.6	132	55	25.0	66
Andrea Sacher[3]	151	94.4	41	–	0.0	–
Michael Schmidt-Kießling	151	94.4	132	–	0.0	–
Alberto Weisser[4]	109	66.5	–	41	25.0	–
Prof. Dr. Otmar D. Wiestler	151	70.9	132	51	23.9	33
Prof. Dr. Norbert Winkeljohann (Chairman)[5]	453	95.8	311	–	0.0	54
Oliver Zühlke (Vice Chairman)	302	94.7	264	–	0.0	–
Individuals who ceased to be members of the Supervisory Board in 2020 and 2021						
Johanna W. (Hanneke) Faber[6]	42	100.0	132	–	0.0	–
Prof. Dr. Wolfgang Plischke[7]	42	49.4	132	43	50.6	132
Sabine Schaab[8]	–	–	78	–	–	20
Werner Wenning[9]	–	–	129	–	–	–

C 2.4/3

Compensation Awarded and Due (Part II)

	Attendance fees			Total compensation	
		2021	2020	2021	2020
Supervisory Board members serving as of Dec. 31, 2021	(€ thousand)	(%)	(€ thousand)	(€ thousand)	(€ thousand)
Dr. Paul Achleitner	11	4.6	1	237	199
Dr. Simone Bagel-Trah	9	5.2	1	174	133
Horst Baier[1]	17	5.3	–	322	201
Dr. Norbert W. Bischofberger	11	5.7	1	192	166
André van Broich	14	5.7	2	247	200
Ertharin Cousin	11	6.0	1	182	133
Dr. Thomas Elsner	17	6.5	2	260	233
Colleen A. Goggins	12	5.8	–	208	165
Robert Gundlach	11	5.7	1	192	135
Heike Hausfeld	9	4.7	2	191	167
Reiner Hoffmann	9	5.6	1	160	133
Dr. Fei-Fei Li[2]	8	6.8	–	117	–
Frank Löllgen	12	4.9	2	246	200
Petra Reinbold-Knape	14	6.4	1	220	199
Andrea Sacher[3]	9	5.6	–	160	41
Michael Schmidt-Kießling	9	5.6	1	160	133
Alberto Weisser[4]	14	8.5	–	164	–
Prof. Dr. Otmar D. Wiestler	11	5.2	1	213	166
Prof. Dr. Norbert Winkeljohann (Chairman)[5]	20	4.2	2	473	367
Oliver Zühlke (Vice Chairman)	17	5.3	2	319	266
Individuals who ceased to be members of the Supervisory Board in 2020 and 2021					
Johanna W. (Hanneke) Faber[6]	–	0.0	1	42	133
Prof. Dr. Wolfgang Plischke[7]	–	0.0	2	85	266
Sabine Schaab[8]	–	–	1	–	99
Werner Wenning[9]	–	–	2	–	131

[1] Member of the Supervisory Board since April 28, 2020
[2] Member of the Supervisory Board since April 27, 2021
[3] Member of the Supervisory Board since September 8, 2020
[4] Member of the Supervisory Board since April 27, 2021
[5] Chairman of the Supervisory Board since April 28, 2020
[6] Member of the Supervisory Board until April 27, 2021
[7] Member of the Supervisory Board until April 27, 2021
[8] Member of the Supervisory Board until August 4, 2020
[9] Chairman of the Supervisory Board until April 28, 2020

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.

2.5 Development of Board of Management Compensation Relative to Employee Compensation and the Financial Performance of the Company

The table below provides an overview of the development of the compensation awarded and due to current and former members of the Board of Management and Supervisory Board, the development of the average compensation of the employees, and the development of selected financial performance indicators of the Bayer Group and Bayer AG over the past five years.

The former Board of Management members included in the table are those who stepped down in the last 10 years. The former Supervisory Board members shown in the table are those to whom compensation was awarded or due in 2021.

The compensation shown below for the employees, nonmanagerial employees and overall workforce in Germany includes the employees of Bayer AG, Leverkusen, Bayer Intellectual Property GmbH, Monheim am Rhein, and Pallas Versicherung Aktiengesellschaft, Leverkusen. From 2018, the figures do not include Animal Health employees. The employees of Bayer Business Services (BBS) GmbH, Leverkusen have been accounted for within Bayer AG, Leverkusen, since January 1, 2020.

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.

C 2.5/1

Development of Compensation and Financial Performance – Comparative Overview

in € thousand	2017	Δ (%)	2018	Δ (%)	2019	Δ (%)	2020	Δ (%)	2021
Serving Board of Management members as of Dec. 31, 2021									
Werner Baumann (Chairman)[1]	2,972	+9.4	3,250	+13.4	3,687	+7.9	3,978	+43.3	5,702
Liam Condon[2]	1,412	+36.0	1,921	+31.3	2,523	–16.6	2,104	+292.1	8,249
Sarena Lin	–	–	–	–	–	–	–	–	3,709
Wolfgang Nickl	–	–	1,135	+51.0	1,714	–23.3	1,315	+127.8	2,996
Stefan Oelrich	–	–	277	+866.1	2,676	–20.4	2,129	+71.2	3,644
Heiko Schipper	–	–	1,816	+22.7	2,228	–3.9	2,141	+48.2	3,173
Former members									
Dr. Marijn Dekkers[1]	(5)	–4,500.0	220	–35.9	141	–626.2	(742)	–187.6	650
Johannes Dietsch[1, 2]	1,498	+162.8	3,937	–108.6	(338)	–56.5	(147)	+134.7	(345)
Dr. Hartmut Klusik[1, 2]	1,388	+16.1	1,612	+220.0	5,158	–98.6	72	–505.6	(292)
Michael König[1]	(126)	+165.1	(334)	–0.9	(331)	–29.9	(232)	–	–
Kemal Malik[1, 2]	1,448	+12.8	1,633	+632.2	11,957	–	–	–	(363)
Erica Mann[1, 2]	1,264	+482.5	7,363	–	–	–	(49)	+475.5	(282)
Prof. Dr. Wolfgang Plischke[1]	535	–37.9	332	+29.8	431	+1.2	436	+0.7	439
Dr. Richard Pott[1]	816	–28.2	586	+2.6	601	+1.0	607	+0.8	612
Dieter Weinand[1, 2]	1,682	+126.8	3,815	–	–	–	(52)	+765.4	(450)

[1] Differences between the compensation awarded in previous years (e.g., for the LTI and the virtual shares awarded under the STI program through 2015) and the actual payouts in the subsequent years are shown in the year in which payment is made. If the compensation awarded is higher than the amount actually paid out, it can result in a negative amount, which is then included in awarded compensation in the year in which payment is made.

[2] During their last year of service on the Board of Management, members may potentially be awarded various severance and indemnity payments under a termination agreement. The severance payments comprise, for example, base compensation, STI and LTI and pension entitlements granted to them under their original Board of Management contract until its termination.

C 2.5/1 continued

Development of Compensation and Financial Performance – Comparative Overview

in € thousand	2017	Δ (%)	2018	Δ (%)	2019	Δ (%)	2020	Δ (%)	2021
Serving Supervisory Board members as of Dec. 31, 2021									
Dr. Paul Achleitner	197	+ 3.6	204	0.0	204	– 2.5	199	+ 19.1	237
Dr. Simone Bagel-Trah	131	+ 4.6	137	0.0	137	– 2.9	133	+ 30.8	174
Horst Baier	–	–	–	–	–	–	201	+ 60.2	322
Dr. Norbert W. Bischofberger	95	+ 78.9	170	+ 0.6	171	– 2.9	166	+ 15.7	192
André van Broich	176	+ 16.5	205	0.0	205	– 2.4	200	+ 23.5	247
Ertharin Cousin	–	–	–	–	34	+ 291.2	133	+ 36.8	182
Dr. Thomas Elsner	141	+ 47.5	208	+ 8.2	225	+ 3.6	233	+ 11.6	260
Colleen A. Goggins	93	+ 46.2	136	+ 13.2	154	+ 7.1	165	+ 26.1	208
Robert Gundlach	–	–	–	–	5	+ 2,600.0	135	+ 42.2	192
Heike Hausfeld	116	+ 48.3	172	0.0	172	– 2.9	167	+ 14.4	191
Reiner Hoffmann	130	+ 4.6	136	– 0.7	135	– 1.5	133	+ 20.3	160
Dr. Fei-Fei Li	–	–	–	–	–	–	–	–	117
Frank Löllgen	200	+ 4.0	208	0.0	208	– 3.8	200	+ 23.0	246
Petra Reinbold-Knape	196	+ 4.1	204	+ 0.5	205	– 2.9	199	+ 10.6	220
Andrea Sacher	–	–	–	–	–	–	41	+ 290.2	160
Michael Schmidt-Kießling	133	+ 3.8	138	– 0.7	137	– 2.9	133	+ 20.3	160
Alberto Weisser	–	–	–	–	–	–	–	–	164
Prof. Dr. Otmar D. Wiestler	166	+ 2.4	170	+ 0.6	171	– 2.9	166	+ 28.3	213
Prof. Dr. Norbert Winkeljohann (Chairman)	–	–	165	+ 75.8	290	+ 26.6	367	+ 28.9	473
Oliver Zühlke (Vice Chairman)	264	+ 3.4	273	– 1.1	270	– 1.5	266	+ 19.9	319
Former Supervisory Board members[3]									
Johanna W. (Hanneke) Faber (until April 27, 2021)	132	+ 3.0	136	– 0.7	135	– 1.5	133	– 68.4	42
Prof. Dr. Wolfgang Plischke (until April 27, 2021)	264	+ 3.8	274	+ 0.4	275	– 3.3	266	– 68.0	85
Employees									
Average compensation for employees[4]	109	– 7.3	101	+ 6.9	108	– 1.9	106	– 1.9	104
Financial performance									
EBITDA before special items (€ million) (Bayer Group)[5]	9,288	+ 2.8	9,547	+ 20.5	11,503	– 0.4	11,461	– 2.5	11,179
Core earnings per share (in €)[6]	6.74	– 11.9	5.94	+ 7.7	6.40	– 0.2	6.39	+ 1.9	6.51
Net income/net loss (Bayer AG)	4,543	– 53.4	2,117	+ 115.3	4,557	– 155.9	(2,547)	– 261.4	4,110

[3] Supervisory Board members who stepped down in 2021

[4] The average compensation of managerial and nonmanagerial employees (based on full-time equivalents) comprises base compensation (for nonmanagerial employees under collective bargaining agreements: annual salary plus any shift bonuses and allowances depending on the position; for other employee groups: annual functional income), the annual bonus paid out in the fiscal year (short-term incentive (STI) payout based on actual target attainment in prior year), and the four-year stock-based compensation paid out in the fiscal year (where the respective employee groups are eligible to participate). For nonmanagerial employees, the 13th monthly salary and the contractually agreed vacation bonus were taken into account. Fringe benefits taken into account comprised employer contributions to social insurance and, for eligible employee groups, the budget provided for a company car. 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.

[5] 2017–2020 as originally reported, forming basis for compensation

[6] Core earnings per share from continuing operations, 2017–2020 as originally reported, forming basis for compensation

The following voluntary overview shows the development of the target direct compensation of the Board of Management in relation to both the compensation of all employees in Germany and that of nonmanagerial employees under collective bargaining agreements in Germany. The aim of this approach is to enhance comparability in the development of compensation. It is calculated based on contractually agreed target compensation levels with respect to base compensation, short-term variable cash compensation and the four-year long-term stock-based cash 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.

C 2.5/2

Development of Average Target Direct Compensation[1] of the Board of Management and Employees

€	2017	Change %	2018	Change %	2019	Change %	2020	Change %	2021
Board of Management	3,074,400	+1.6	3,123,600	+5.9	3,307,600	+7.3	3,548,790	+4.7	3,715,425
All employees[2] in Germany	91,276	+2.6	93,678	+4.0	97,445	+0.6	98,014	+1.4	99,390
Nonmanagerial employees in Germany	61,249	+1.8	62,351	+4.4	65,123	−0.6	64,763	+1.3	65,623

[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). The relative changes in average target direct 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. In connection with the implementation of Section 162 of the German Stock Corporation Act (AktG), compensation data was redetermined to achieve consistency between the existing vertical analysis and the comparative overview shown in table C 2.5/1.

[2] Excluding the Board of Management

The difference between the percentage increases in average target direct compensation for nonmanagerial employees and that for all employees in Germany in 2021 compared with 2020 is again primarily due to changes in the structure of the workforce as a result of restructuring measures. In addition, the compensation of nonmanagerial employees in Germany was adjusted effective July 1, 2020, and July 1, 2021, as agreed in the 2019 collective bargaining agreement.

In 2021, the ratio between the average compensation of a Board of Management member and that of all employees in Germany stood at 37:1 (2020: 36:1), while the ratio between the average compensation of a Board of Management member and that of nonmanagerial employees in Germany was 57:1 (2020: 55:1). For the Chairman of the Board of Management, the ratios were 63:1 (2020: 60:1) in relation to all employees in Germany and 95:1 (2020: 90:1) in relation to nonmanagerial employees in Germany. The prior-year figures above were adjusted due to the standardization of the calculation logic employed.

Independent Auditor's Report

To Bayer Aktiengesellschaft, Leverkusen

We have audited the attached Compensation Report of Bayer Aktiengesellschaft, Leverkusen, (the "Company"), for the financial year from January 1 to December 31, 2021, including the related disclosures, prepared in observance of Section 162 AktG. We did not audit the content of the Introduction of the Supervisory Board Chairman, which does not fall within the scope of Section 162 AktG.

Responsibilities of the legal representatives and the Supervisory Board

The legal representatives and the Supervisory Board of Bayer Aktiengesellschaft, Leverkusen, are responsible for preparing the Compensation Report, including the related disclosures, that meets the requirements of Section 162 AktG. The legal representatives and the Supervisory Board are also responsible for such internal controls as they have determined necessary to enable the preparation of a Compensation Report, including the related disclosures, that is free from material misstatements, whether due to fraud or error.

Responsibilities of the independent auditor

Our task is to issue an opinion on this Compensation Report, including the related disclosures, on the basis of our audit. We conducted our audit in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW). In accordance with these standards, we are required to fulfill our professional obligations and to plan and perform the audit in such a way as to obtain reasonable assurance about whether the Compensation Report, including the related disclosures, is free from material misstatements.

An audit comprises the performance of audit procedures in order to obtain audit evidence for the stated values in the Compensation Report, including the related disclosures. The selection of audit procedures is made at the dutiful discretion of the independent auditor. This includes an assessment of the risks of material misstatements, whether due to fraud or error, in the Compensation Report. In assessing these risks, the independent auditor considers the internal control system relevant for the preparation of the Compensation Report, including the related disclosures. The objective is to plan and perform audit procedures that are appropriate under the given circumstances, but not to issue an audit opinion on the efficacy of the Company's internal control system. An audit also comprises an assessment of the accounting methods applied, the tenability of the values estimated by the legal representatives and the Supervisory Board in the accounting records, and an assessment of the overall presentation of the Compensation Report, including the related disclosures.

We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Audit opinion

In our opinion, on the basis of the knowledge obtained in the audit, the Compensation Report for the financial year from January 1 to December 31, 2021, including the related disclosures, complies with the accounting regulations Section 162 AktG in all material respects. Our audit opinion on the Compensation Report does not extend to the content of the aforementioned Introduction of the Supervisory Board Chairman, which does not fall within the scope of Section 162 AktG.

Other matter – Formal audit of the Compensation Report

The audit of the content of the Compensation Report described in this Independent Auditor's Report comprises the formal audit of the Compensation Report required by Section 162 (3) AktG, including the issuance of a report on this audit. Because we are providing an unqualified audit opinion on the audit of the content of the Compensation Report, this audit opinion also includes the finding that the statements required by Section 162 (1) and 2 AktG have been made in the Compensation Report in all material respects.

Other information

The Supervisory Board is responsible for the Other information. The Other information consists of the introduction to the Compensation Report by the Chairman of the Supervisory Board.

Our audit opinion on the Compensation Report does not extend to the Other information and therefore we provide neither an audit opinion nor any other kind of audit assurance on this subject.

In connection with our audit, our responsibility is to read the Other information and determine whether the Other information

- is materially inconsistent with the Compensation Report or our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If we conclude on the basis of the work we have performed that there is a material misstatement of this Other information, we are required to report that fact. We have no findings to report on this subject.

Intended purpose of the Independent Auditor's Report

We issue this Independent Auditor's Report on the basis of the engagement agreement concluded with the Company. The audit was performed for purposes of the Company and the Independent Auditor's Report is only intended to inform the Company about the results of the audit.

Liability

This Independent Auditor's Report is not intended for third parties to make (financial) decisions on this basis. We are solely responsible to Bayer Aktiengesellschaft, Leverkusen, and our responsibility is also limited by the engagement agreement concluded with the Company on November 11/14, 2021 and by the "General Terms of Engagement for German Public Auditors and German Public Audit Firms" in the version of January 1, 2017 of the Institut der Wirtschaftsprüfer in Deutschland e.V. However, we do not accept or assume any responsibility to third parties.

Munich, February 23, 2022

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Signed: Prof. Dr. Frank Beine
Wirtschaftsprüfer
(German Public Auditor)

Signed: Michael Mehren
Wirtschaftsprüfer
(German Public Auditor)

D 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, 2021, 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)
- Deutsche Bank AG
- Georgsmarienhütte Holding GmbH
- heristo aktiengesellschaft (Chairman) (until January 2021)
- Sievert AG (Chairman)

Attendance at Supervisory Board and committee meetings: 25 of 25

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: 17 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:

- 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: 17 of 19

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: 15 of 15

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:

- Morphic Holding, Inc. (Board of Directors)

Attendance at Supervisory Board and committee meetings: 11 of 11

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)
- Mondelez International, Inc. (Board of Directors) (effective January 2022)

Attendance at Supervisory Board and committee 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: 15 of 15

Johanna W. (Hanneke) Faber
Amstelveen, Netherlands
(born April 19, 1969)

Member of the Supervisory Board until April 2021

President Foods & Refreshments at Unilever PLC

Attendance at Supervisory Board meetings: 3 of 3

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 Group AG (Board of Directors)

Attendance at Supervisory Board and committee meetings: 12 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 (until April 2021)

Vice Chairman of the Works Council of the Berlin site (effective 2021)

Attendance at Supervisory Board and committee meetings: 11 of 11

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

Attendance at Supervisory Board and committee meetings: 14 of 14

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: 9 of 9

Dr. Fei-Fei Li
Palo Alto, U.S.A.
(born July 3, 1976)

Member of the Supervisory Board effective April 2021

Professor in the Computer Science Department at Stanford University and Co-Director of Stanford's Human-Centered Artificial Intelligence Institute

Memberships in comparable supervising bodies of German or foreign corporations:

- Nimble Robotics, Inc. (Board of Directors)
- Reinvent Technology Partners (Board of Directors)
- Twitter Inc. (Board of Directors)

Attendance at Supervisory Board meetings: 5 of 6

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

Attendance at Supervisory Board and committee meetings: 12 of 14

Prof. Dr. Wolfgang Plischke
Aschau im Chiemgau, Germany
(born September 15, 1951)

Member of the Supervisory Board until April 2021

Independent consultant

Memberships on other supervisory boards:

- Evotec SE (Chairman)

Attendance at Supervisory Board and committee meetings: 5 of 5

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 (until October 2021)

Trade Union Secretary at the German Mining, Chemical and Energy Industrial Union, board division 1, overall management (effective October 2021)

Memberships on other supervisory boards:

- Covestro AG
- Covestro Deutschland AG

Attendance at Supervisory Board and committee meetings: 13 of 14

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 (until April 2021)

Chairwoman of the Works Council of the Berlin site (effective April 2021)

Vice Chairwoman of the Bayer Central Works Council

Attendance at Supervisory Board meetings: 9 of 9

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: 9 of 9

Alberto Weisser
Igrejinha, Portugal
(born June 26, 1955)

Member of the Supervisory Board effective April 2021

Senior Consultant at Temasek International Pte. Ltd.

Memberships in comparable supervising bodies of German or foreign corporations:

- Linde plc (Board of Directors) (effective November 2021)
- PepsiCo, Inc. (Board of Directors)

Attendance at Supervisory Board and committee meetings: 9 of 9

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 Centers e.V.

Attendance at Supervisory Board and committee meetings: 11 of 11

* Expert member in the field of auditing pursuant to Section 100, Paragraph 5 of the German Stock Corporation Act (AktG)

** Expert member in the field of accounting pursuant to Section 100, Paragraph 5 of the German Stock Corporation Act (AktG)

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 18, 2022, or the date on which they ceased to be members of Board of Management):

Standing committees of the Supervisory Board of Bayer AG (as at December 31, 2021)

Presidial Committee / Mediation Committee
Winkeljohann* (Chairman), Achleitner, Reinbold-Knape, Zühlke

Audit Committee
Baier** (Chairman), Elsner, Löllgen, Weisser, Winkeljohann*, Zühlke

Human Resources Committee
Winkeljohann* (Chairman), Achleitner, van Broich, Hausfeld

Nomination Committee
Winkeljohann* (Chairman), Achleitner, Bagel-Trah, Goggins

Innovation Committee
Wiestler (Chairman), Bischofberger, van Broich, Cousin, Gundlach, Löllgen, Winkeljohann*, Zühlke

Glyphosate Litigation Committee (until December 31, 2021)
Winkeljohann* (Chairman), Achleitner, Baier**, van Broich, Elsner, Goggins, Reinbold-Knape, Zühlke

ESG Committee (effective January 1, 2022)
Cousin (Chairwoman), Achleitner, van Broich, Goggins, Hausfeld, Sacher, Winkeljohann*, Zühlke

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

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

Stefan Oelrich
(born June 1, 1968)

Member of the Board of Management effective November 1, 2018, appointed until October 31, 2025

Pharmaceuticals

- InforMed Data Systems Inc. (Board of Directors)

Rodrigo Santos
(born May 28, 1973)

Member of the Board of Management effective January 1, 2022, appointed until December 31, 2024

CropScience

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.

Member of the Board of Management until December 31, 2021

Liam Condon
(born February 27, 1968)

Crop Science

Financial Calendar

Annual Stockholders' Meeting 2022	*April 29, 2022*
Planned dividend payment day	*May 4, 2022*
Q1 2022 Quarterly Statement	*May 10, 2022*
2022 Half-Year Report	*August 4, 2022*
Q3 2022 Quarterly Statement	*November 8, 2022*
2022 Annual Report	*February 28, 2023*
Annual Stockholders' Meeting 2023	*April 28, 2023*
Q1 2023 Quarterly Statement	*May 11, 2023*

Masthead

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Forward-Looking Statements
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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