Annual Report

2017

Augmented Version

Science for a **better life**

Bayer Annual Report 2017

The integrated Bayer Annual Report 2017 is available in a print version and in an augmented online version (Annual Report 2017 – Augmented Version). The online version contains the notes to the consolidated financial statements of the Bayer Group, along with additional information on the management report.

The Annual Report 2017 – Augmented Version can be found at www.bayer.com/AR17.

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Cover photo: Farmer Aaron Gingerich with his daughter Kylie on one of his cornfields in Illinois, United States. You can read more in the Magazine section, which starts on page 8.

At a Glance

Sales

+1.5%[1]

EBITDA Before Special Items

-0.3%

Net Income

+61.9%[2]

Core Earnings per Share

+1.0%[2]

Supplier Management

99.5%

of all strategically important suppliers evaluated since 2012

Investment in Research and Development

€4.5 billion

Specific Greenhouse Gas Emissions[3]

-4.5%[2]

Energy Efficiency[3]

up by 3.8%[2]

Proportion of Women in Senior Management

♀ 32%

[1] Currency- and portfolio-adjusted [2] Changes from 2016; 2016 figures restated [3] Bayer excluding Currenta

Fiscal 2017

Bayer: business at prior-year level – on track with strategy

- → Group sales €35.0 billion (Fx & portfolio adj. +1.5%)
- → Another record year for Pharmaceuticals
- → Weak business development at Consumer Health
- → Crop Science business down against prior year due to situation in Brazil – measures taking effect
- → EBITDA before special items €9.3 billion (–0.3%)
- → Net income €7.3 billion (+61.9%)
- → Core earnings per share €6.74 (+1.0%)
- → Covestro deconsolidated – additional cash inflows of €4.7 billion
- → Monsanto acquisition expected to close in second quarter of 2018
- → Further progress in implementing sustainability targets
- → Group outlook for 2018: increase in sales (Fx & portfolio adj.), EBITDA before special items and core earnings per share at prior-year level due to currency effects

Key Data

€ million	2016	2017	Change from 2016 (%)
Bayer Group			
Sales	34,943	35,015	+0.2%
EBITDA [1]	8,801	8,563	–2.7%
EBITDA before special items [1]	9,318	9,288	–0.3%
EBITDA margin before special items [1]	26.7%	26.5%	
EBIT [1]	5,738	5,903	+2.9%
EBIT before special items [1]	6,826	7,130	+4.5%
Income before income taxes	4,773	4,577	–4.1%
Net income (from continuing and discontinued operations)	4,531	7,336	+61.9%
Earnings per share (from continuing and discontinued operations) (€) [1]	5.44	8.41	+54.6%
Core earnings per share (from continuing operations) (€) [1]	6.67	6.74	+1.0%
Net cash provided by operating activities (from continuing and discontinued operations)	9,089	8,134	–10.5%
Net financial debt	11,778	3,595	–69.5%
Capital expenditures as per segment table [2]	2,627	2,418	–8.0%
Bayer AG			
Total dividend payment	2,233	2,315	+3.7%
Dividend per share (€)	2.70	2.80	+3.7%
Innovation			
Research and development expenses	4,405	4,504	+2.2%
Ratio of R&D expenses to sales – Pharmaceuticals (%)	16.7	16.2	
Ratio of R&D expenses to sales – Crop Science (%)	11.7	11.7	
Employees in research and development	14,213	14,041	–1.2%
Employees			
Number of employees [3] (Dec. 31)	99,592	99,820	+0.2%
Personnel expenses (including pension expenses) (€ million)	9,459	9,528	+0.7%
Proportion of women in senior management (%)	31	32	
Proportion of employees with health insurance (%)	98	98	
Fluctuation (voluntary / total) (%)	4.8 / 13.2	4.8 / 10.4	
Hours of vocational and ongoing training per employee	23.0	23.4	+1.7%
Safety & Environmental Protection			
Recordable Incident Rate (RIR) for Bayer employees	0.40	0.45	+12.5%
Loss of Primary Containment Incident Rate (LoPC-IR) [4]	0.17	0.13	–21.4%
Total energy consumption (terajoules)	26,243	25,832	–1.6%
Energy efficiency (kWh / €1,000 external sales) [5]	130	125	–3.8%
Total greenhouse gas emissions (CO_2 equivalents in million t) [6]	4.64	3.63	–21.8%
Specific greenhouse gas emissions (kg CO_2 equivalents / €1,000 external sales) according to the market-based method [7]	48.45	46.26	–4.5%
Water use (million m^3)	93	98	+6.0%

2016 figures restated

[1] For definitions of the indicators see A 2.4

[2] Group total 2016 including Covestro

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

[4] Number of incidents in which chemicals leak from their primary container, such as pipelines, pumps, tanks or drums, per 200,000 working hours

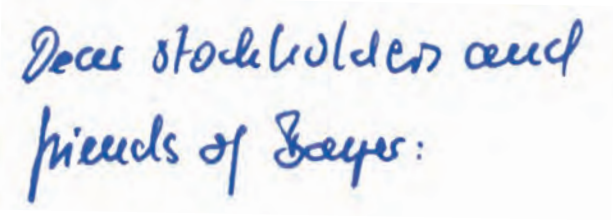
[5] Quotient of total energy consumption and manufactured sales volume; Bayer excluding Currenta

[6] Direct emissions from power plants, waste incinerators and production plants and indirect emissions from external supplies of electricity, steam and cooling (according to the market-based method); portfolio-adjusted in accordance with the GHG Protocol

[7] Bayer excluding Currenta

Chairman's Letter

People should know what Bayer stands for



I am pleased to present to you Bayer's new annual report. It reflects an eventful year in which our employees around the world once again showed great commitment to drive the success of our company. On behalf of the Board of Management – and on your behalf as well I'm sure – I would like to sincerely thank all our employees for their dedication.

The trust you have in our employees, in the members of the Supervisory Board and Board of Management, and in me personally strengthens us in our daily work. I would like to sincerely thank you and I am pleased that we are once again able to let you participate in Bayer's success. We are therefore proposing to the Annual Stockholders' Meeting an increase in the dividend to €2.80 per share.

2017 was a year of ups and downs. We saw many advances, but also experienced setbacks. We received new approvals, formed new collaborations and celebrated encouraging successes. But we also had to deal with unexpectedly high inventories in our Crop Science Division in Brazil and with the weak business development of our Consumer Health Division, which meant we had to adjust our guidance during the year. Overall, sales and earnings in 2017 remained only on a par with 2016.

Our share price reflected this development. Over the course of 2017, Bayer stock delivered just over seven percent, which was less than the DAX and the Euro STOXX 50. The ongoing regulatory process for the planned Monsanto acquisition certainly played a role here. We are very confident that we will receive final antitrust approval in the second quarter of 2018.

In 2017, we also benefited from the long-term realignment of our company across the rest of the portfolio. Since the IPO of Covestro in October 2015, we have been aiming to sell our shares step by step and to achieve full separation from Covestro in the medium term. Last year, Bayer AG reduced its direct interest in Covestro from 64.2 percent to 24.6 percent, generating cash inflows of around €4.7 billion thanks to Covestro's good share price performance. Bayer's strategic foresight has proved successful and we also have had a lucky hand.

It is with the same long-term perspective that we are pursuing the Monsanto acquisition. We are deeply convinced that both companies together can create significant additional value for our customers and shareholders, as well as for the society in which we live and whose acceptance we need. Providing food in high quality, sufficient quantity and at affordable prices is crucial to human coexistence. And we want to contribute to that.

In 2017, we made important progress in obtaining antitrust approval for the planned acquisition. Of particular importance was the agreement with BASF in October regarding large parts of our seeds business and the Liberty™ / LibertyLink™ herbicide platform. These are excellent businesses that have been built up by our employees over the years. We regret having to divest these businesses, but we are convinced that in BASF we have found a long-term strategic purchaser and an employer with a first-class reputation.

Bayer reached another long-term decision in November by in-licensing two development candidates from biotechnology company Loxo Oncology. Both these candidates complement our existing oncology portfolio. Moreover, it shows that we are keeping our word because we have always emphasized that we will continue to invest in our other businesses regardless of the acquisition of Monsanto.

Covestro, Monsanto and Loxo are prime examples of how Bayer has demonstrated its strategic foresight in 2017. Clear focus and long-term perspective – that's the way we run our company. We have aligned our business activities to the main societal challenges in the fields of health and nutrition, and we are convinced that we are able to provide substantial and sustainable solutions, based on the highest standards and our responsibility to humankind and the environment. This aspiration is conveyed by Bayer's corporate purpose: "Science for a better life."

It is an aspiration that brings us together across borders and business activities. But what are the main societal challenges? And what could the solutions to these look like?

For example, we are aware that human life expectancy is increasing with every generation. But the older we get, the more susceptible we become to illness. It is of enormous social importance that we address this development with better preventive medicine and treatments. Shaping demographic change through research and innovation in order to enable people to have longer, healthier lives is one of the greatest challenges of our time.

Our Pharmaceuticals Division has dedicated itself to this task and also made progress in 2017. In February, a Phase III clinical trial involving rivaroxaban, the active ingredient in Xarelto™, in combination with Aspirin™ was ended ahead of schedule due to its outstanding efficacy. This combination can substantially reduce the risk of serious diseases such as heart attack or stroke.

Operationally, sales of Pharmaceuticals increased by a currency- and portfolio-adjusted 4.3 percent in 2017. Clean EBITDA rose by 8.8 percent. This performance was driven by another significant increase in sales of our key growth products Xarelto™, Eylea™, Xofigo™, Stivarga™ and Adempas™, which advanced by over 16 percent to more than €6 billion. This is a very encouraging development.

We are also addressing long-term developments with our Consumer Health Division for nonprescription medicines. There is a trend toward self-care, which is being further strengthened by individualization and digitalization.

People are becoming more aware of the importance of exercise and preventive medicine, and are realizing that they need to do something for their own health. After all, no-one knows us as well as we know ourselves. That's why we need a customized plan to protect our health – for example, against exposure to the sun or allergies.

Our business is well positioned to address this trend. However, 2017 was still a difficult year operationally. Competition in the United States in particular has had an impact on our business, as has a regulatory decision taken in China. Overall, Consumer Health figures in 2017 were below the prior-year level and also below our expectations. Sales declined by a currency- and portfolio-adjusted 1.7 percent, while clean EBITDA decreased significantly by 12.8 percent.

In agriculture, global challenges are raising particularly pressing questions. How will we feed a continuously growing global population? How will we ensure food security in light of climate change? And how will we facilitate farming practices that use finite resources in a sustainable and efficient way? All of these questions are part of a challenge for humankind that farmers around the world will have to tackle in the years ahead. As a partner to farmers – both large companies as well as smallholders – Bayer wants to contribute to the solution for this challenge.

Business development in our Crop Science Division in 2017 was shaped by the difficult situation in Brazil, where several factors led to unexpectedly high inventories of crop protection products. This meant that we had to establish provisions and adjust our full-year business guidance in the second quarter. We immediately initiated a number of measures to normalize the situation and can already see these measures taking effect. Overall, Crop Science sales in 2017 declined by a currency- and portfolio-adjusted 2.2 percent. Excluding figures for Brazil, however, business was above the prior-year level. Clean EBITDA at Crop Science declined by 15.6 percent in 2017. Our Animal Health business delivered a positive performance, with growth of 2.0 percent in currency- and portfolio-adjusted sales and 9.2 percent in clean EBITDA.

Clear focus and long-term perspective – that's the way we run our company.

Bayer CEO Werner Baumann

Having a long-term perspective also means continuously investing in the future. Our company has kept investment at a high level, spending €4.5 billion on research and development in 2017. We are also investing in our sites. Capital expenditures for property, plant and equipment amounted to €2.1 billion in 2017 and a similar level of investment is also planned for this year.

Moreover, with "Leaps by Bayer," we are working on promising, pioneering technologies. For example, in 2017, we set up a joint venture to improve microbes so that they can provide crop plants with nitrogen via their roots, potentially making nitrogen fertilizer no longer necessary one day. This would reduce both soil pollution in fields and greenhouse gas emissions and would be a milestone for greater sustainability in agriculture.

We are investing in our future. This also applies to us as an employer. Last year, we went some way to ensure that Bayer remains a company where people all over the world enjoy working. We promote a culture of trust and mutual respect and offer our employees a variety of development opportunities. In 2017, Bayer once again received numerous awards as a top employer around the world, including in Germany, China and Brazil. In Germany, we had a record number of applicants for our vocational training places and, according to a survey of German school students, we are by far the most popular company in the chemical and pharmaceutical industry. We are proud of that.

We want people to know what Bayer stands for. This is especially important now, given the particular focus on the Monsanto acquisition. In our view, the current debate is often based on an emotional appeal to people's fears rather than on communicating facts. This is an approach we reject, especially when it is applied as a business model and thus used to gain an advantage.

Our business model is different. We invent and create new and better products that meet people's needs. These products must undergo meticulous testing and can only be approved if they have a positive benefit-risk assessment. To achieve this, we work to the highest standards in research, development and production, for the benefit of customers and patients and to ensure the sustainability of our activities.

Our endeavor to find new solutions leads to innovations and social progress. But the road we travel to get there often looks more like a steep path with lots of bends and obstacles than a wide street that allows unhindered passage. Research and progress go hand in hand with uncertainty and depend on effort and perseverance. Yet this steep path is the only way to achieve progress as a society. This is something that I strongly believe. And following this path is Bayer's core competency.

As a global company, we have a responsibility that we accept and that we are living up to through our commitment to the U.N. Global Compact and our pursuit of clearly defined values. These include safety as our top priority. We minimize health and environmental risks along the entire value chain. We communicate to our customers how to use our products safely. We stand for a culture of fair treatment and fair competition. We strictly comply with the law and operate in accordance with the highest ethical standards.

We want to be measured against these values by others, including you, dear stockholders. I would like to thank you for the trust you have placed in Bayer. We will do everything we can to live up to this trust in 2018 as well.

Sincerely,

Werner Baumann
Chairman of the Board of Management of Bayer AG

Magazine

The market in Varanasi, in the Indian state of Uttar Pradesh. This is where the chili peppers grown by local farmers are sold.

Gaining time

A cancer diagnosis often comes from out of nowhere. And it's a life-altering experience. Researchers around the world are working on finding more targeted ways to fight different types of cancer. Prostate cancer, the second most common form of cancer among men, is just one of them.

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Extra protection

Our skin is exposed to heat and cold. It can also be harmed by microorganisms. That's why our largest organ needs special care.

Page 14

Page 18

Two worlds

Two farmers, two worlds. Pappu Singh grows chili peppers in India for the local market. He's happy to be able to feed his family. Aaron Gingerich produces corn in the Midwestern United States. He faces global competition and has to run his farm as efficiently as possible.

PHARMACEUTICALS

Gaining *time*

A cancer diagnosis often comes from out of nowhere. And it is a life-altering experience. Researchers around the world are working on ways to fight cancer in a more targeted way. As part of these efforts, Bayer's scientists have developed a substance that works through alpha radiation to treat patients with prostate cancer, the second most common form of this disease in men worldwide. Siegfried Stark has benefited from this approach.

Many things become more valuable as time goes by. Siegfried Stark's green racing bike is one of those things. It's a real collector's item. The retired bricklayer used to ride 3,000 kilometers a year on it, over hill and dale. It's just one of ten bicycles stored in the cellar of his home in Gieboldehausen near Göttingen, Germany. But the most precious thing – at least for him – is that he associates many memories with his bicycle.

Today the 77-year-old is very happy that he can ride his bike again. That's because three-and-a-half years ago, he was diagnosed with prostate cancer. The majority of newly diagnosed cases of prostate cancer are diagnosed in men aged above 70. In the case of Stark, the cancer had already spread, or metastasized, to his pelvic bones. "I was shocked when I got the diagnosis. I couldn't believe it. I've always tried to lead a healthy life," says Stark. He underwent a routine cancer checkup every year after he turned 50. "When the diagnosis came, I had so many thoughts going through my head. All of a sudden death was a possibility. That wasn't easy for me and my family." Especially considering it wasn't the first time that Stark had had to deal with the issue of cancer: His daughter Manuela was diagnosed with lymphoma back when she was at school – and then with breast cancer in her mid-30s. She underwent chemotherapy and an operation. Today, the 48-year-old administrative specialist lives with her husband and two children not far from her parents. "My daughter survived cancer twice. That gave me hope," says Stark.

A father of three and a grandfather of two, Stark initially received hormone suppression therapy in order to suppress the growth of the cancer. After that, the retiree underwent six cycles of chemotherapy, but tolerated it poorly. "I suffered from side effects and severe pain," he recalls. His PSA level, which plays a role in cancer diagnosis and monitoring, initially declined before climbing again after his final round of chemotherapy. For the active family man, who had worked physically hard all his life, the illness resulted in constant

Staying active despite having cancer: Our video at www.bayer.com/ar-prostatecancer shows how Siegfried Stark lives a fulfilling life despite his illness.

The retired bricklayer does what he can to keep his house in good condition, such as painting the window frames. The garden provides all the fruit and vegetables that Siegfried Stark and his wife need.

ups and downs – until he was treated at Göttingen University Hospital with a therapy that uses alpha radiation to fight bone metastases while minimizing damage to the surrounding tissue.

The alpha radiation emitted by radium-223 leads to double-stranded DNA breaks which the cancer cells cannot repair, eventually leading to cell death. In Stark's case, additional nuclear medicine imaging techniques known as bone scans revealed that the known bone metastases had regressed and no new metastases had formed.

"The chemical structure of radium is similar to that of calcium, so it accumulates in the body wherever bone metabolism is particularly active – for example in bone areas where there is uncontrolled growth of cancer cells, as is the case with bone metastases," explains Scott Fields, head of Oncology Development at the Pharmaceuticals Division. This approach has been proven to be effective in advanced prostate cancer, which often metastasizes to the bones. On the basis of the clinical results from a major Phase III trial with more than 900 patients, the compound has been approved in more than 50 countries worldwide. Bayer scientists are now working on utilizing this technology to treat other types of cancer. For this they are investigating thorium-227 in initial clinical studies. Thorium-227 also works by emitting alpha particles that damage the DNA of cancer cells and which the cells cannot repair. In order to selectively reach different types of tumors, the thorium is attached to a carrier molecule, for example a cancer-specific antibody, which in turn binds to cancer cells. "This could enable us to fight other types of cancer as well, so we are going to study this approach in several different tumor types," says Fields.

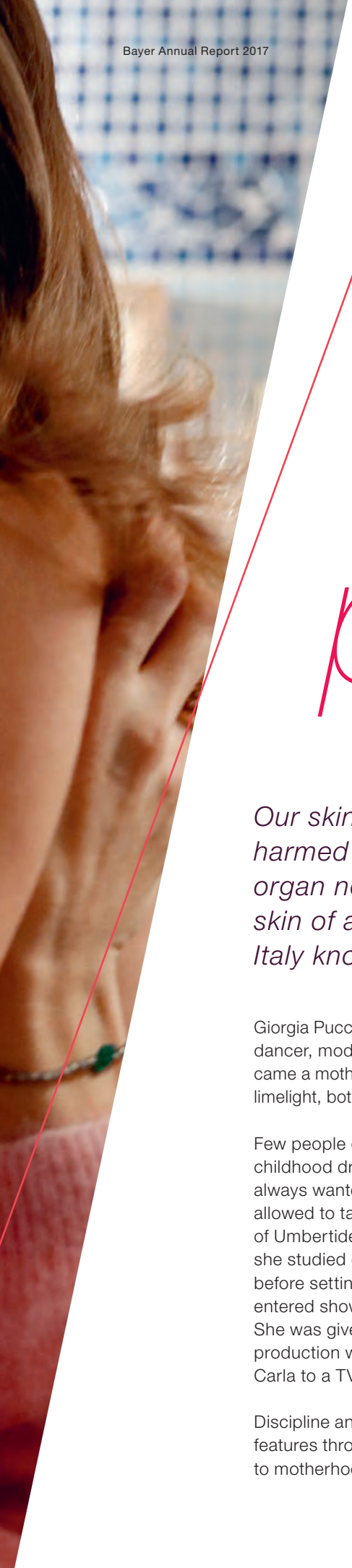
Siegfried Stark from Gieboldehausen was able to fight back against his cancer, which stopped progressing after being treated with the targeted alpha therapy – and now he can still enjoy growing fruit and vegetables in the garden with his wife Marlies and keeping their house in good condition. He also continues to spend as much time as possible with his children and grandchildren, and of course with his green racing bike. "It would be nice if I could stay active for another few years," Stark says.

It would be nice if I could stay active for another few years.

Siegfried Stark

Siegfried Stark spends as much time as he can with his family. Here he is pictured with his granddaughter Vanessa (photo left) and his wife Marlies (photo below) in the garden.

Cancer patient Stark cycling with his grandson Adrian (photo right) and having lunch with his daughter Manuela (photo above).



CONSUMER HEALTH

Extra *protection*

Our skin is exposed to heat and cold. It can also be harmed by microorganisms. That's why our largest organ needs special care. We help protect and heal the skin of all members of the family. Giorgia Pucci from Italy knows how important that is.

Giorgia Pucci sees her skin as an asset. She is a dancer, model and actress – and she also became a mother two years ago. She is often in the limelight, both in front of the camera and on stage.

Few people can say they have fulfilled their childhood dream. Giorgia is one of them. She always wanted to be a ballet dancer and was allowed to take ballet lessons in her home town of Umbertide in Italy from the age of four. Later, she studied economics and then sports science before setting up a gym with two friends. She entered show business more or less by chance: She was given a small part in an Italian television production when she accompanied her sister Carla to a TV casting session in Rome.

Discipline and rigorous training have been key features throughout Giorgia's life, from childhood to motherhood. "I've never canceled a performance," she says. "Reliability is essential in our profession." Three years ago, she was doing her normal 40-minute workout on a treadmill in Germany, which is her second home. However, after a relaxing sauna she suddenly felt dizzy and lightheaded. She then fell and was left with a nasty-looking wound above her eyebrow.

As a model, that was a big problem for her. She was booked to make a video for a luxury hotel in Düsseldorf five days later. "The team had come over from London specially to make the video so I had to turn up." She therefore turned to a product her family had had good experience with in the past: Bepanthen™. "I applied the ointment several times a day and after a few days it was much better. Shortly afterwards I was able to wear normal make-up so I was able to keep the appointment to make the video as if nothing had happened."

That was partly thanks to dexpanthenol, the active ingredient in Bepanthen™ ointment. It stimulates regeneration of the skin and supports healing of superficial wounds. “It also forms a breathable protective film over the wound. That prevents it from drying out and keeps it moist, which helps the healing process,” explains Mandie Smart, Global Brand Director for the Bepanthen™ product family.

Giorgia knew how effective dexpanthenol is because her aunt Claudia had used Bepanthenol™ skincare products to protect the sensitive bottom of her baby daughter Anna Giulia. When Giorgia’s daughter Guendalina was born in Perugia two-and-a-half years ago, she was able to draw on her aunt’s experience. “Like all babies, Guendalina wore diapers constantly in her first year, and that can easily cause redness. I was able to prevent that,” she says.

The continuous development of Bepanthen™ plays a big part in this. First developed 70 years ago, it immediately won over physicians, especially in Germany and Switzerland. Since then, the product family has undergone constant development around the world. Smart says: “We always focus on consumers’ needs. We help their skin regenerate – just as nature intended.” Giorgia and her entire family have relied on that for many years: “It’s reassuring to know there’s always a remedy that helps.”

Giorgia Pucci is a dancer, model and actress – but first and foremost a mother. Watch our video at www.bayer.com/ar-skin to see how she protects her skin.

For the Puccis, good food plays a key role in family life. Our photo shows Giorgia with her sister Carla.

Bepanthen™ was launched in Switzerland in 1944 and subsequently rolled out to other European countries and around the world. Scientists and physicians alike were convinced by how effective the active ingredient dexpanthenol – a more stable version of the pro-vitamin B5 – is at healing wounds. Today, the Bepanthen™ family is one of Bayer’s most successful Consumer Health brands.

Consumers’ needs have always been the central focus in the ongoing development of this wound healing ointment. Milestones include:

/// the development of an antiseptic cream and spray, a nose spray and a foam to treat sunburn

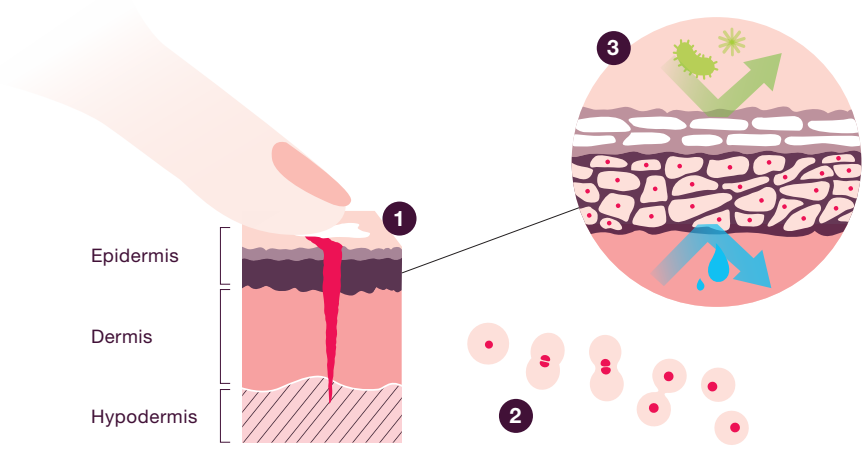
/// products to treat and protect the skin of babies and pregnant women

/// a scar treatment providing a unique formulation and massage device

/// Bepanthol™ care products for the whole family, ranging from face cream and lip balm to washing lotion

Giorgia started learning ballet at the "Centro Studi Danza" dance studio in Umbertide when she was just four years old. Our photo on the right shows the model taking part in a photo shoot.

Giorgia at home with her daughter Guendalina (photo above) and at the gym (photo left). She works out whenever she can.

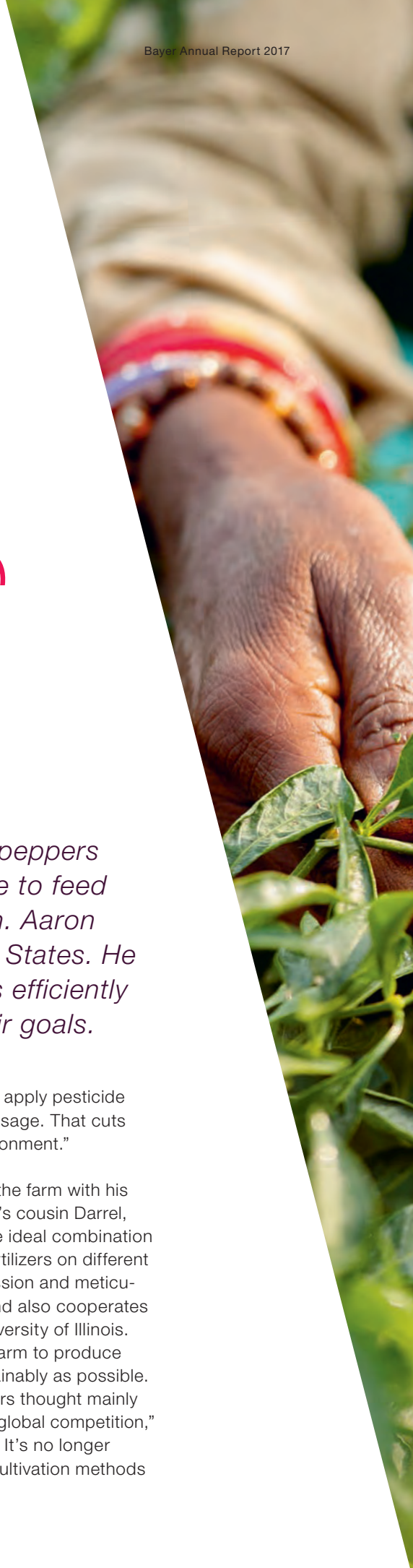


A nutrient for the skin
1.5 to 2 square meters of skin protect us from heat, cold and microorganisms. Wounds interfere with the skin's protective mechanism.

1 Dexpanthenol helps wounds heal faster. The active ingredient in Bepanthen™ wound healing ointment is converted into pantothenic acid (vitamin B5) in the skin.

2 Pantothenic acid supports the regeneration of the cells in the epidermis and connective tissue and their migration to the damaged tissue.

3 The regenerated protective barrier protects the surface of the skin from drying out and the inner layers from damage, pathogens, UV radiation and allergens.



CROP SCIENCE

Two *worlds*

Two farmers, two worlds. Pappu Singh grows chili peppers in India for the local market. He's happy to be able to feed his family and give his two daughters an education. Aaron Gingerich produces corn in the Midwestern United States. He faces global competition and has to run his farm as efficiently as possible. Bayer helps both farmers achieve their goals.

Aaron Gingerich gets really enthusiastic when he talks about digital farming. "We can't control the weather – but we can control how we respond to it." He's sitting in the office of his farm in Lovington, Illinois, in the United States and runs his finger over the screen. The colors show various strips of a corn field where he's growing different varieties. "Even before the harvest, we know which variety grows best where and on what soil," says the 33-year-old, who is also a father. He can then apply the findings to the around 2,000 hectares of land he farms. "We experiment with different seed, pesticides and fertilizers," he says. The data is available digitally – on the computer in the office, in mobile form on the tablet PC or smartphone, and in the control units of the huge agricultural machines. "Our field sprayers can then apply pesticide precisely and in the right dosage. That cuts costs and benefits the environment."

Aaron Gingerich, who runs the farm with his father Dannie and his father's cousin Darrel, has long been exploring the ideal combination of seeds, pesticides and fertilizers on different soils. He works with the passion and meticulousness of a researcher and also cooperates with scientists from the University of Illinois. After all, his goal is for the farm to produce corn as efficiently and sustainably as possible. "Whereas the farm's founders thought mainly in local terms, we now face global competition," says Aaron's father Dannie. It's no longer enough to keep an eye on cultivation methods

Aaron Gingerich plays on the farm with his children Kylie, Tyler and Spencer (photo top left). During the harvest, the family eat their food while out on the field. Charity Gingerich serves the dinner (photo left).

Aaron Gingerich is a passionate farmer. He analyzes his farm data and manages production from his office (photo right). His goal is to make his farm as efficient as possible.

We can't control the weather – but we can control how we respond to it.

Aaron Gingerich

in the United States alone, he adds. "Farms in Brazil or Europe, for example, likewise produce large quantities of high-quality cereals. That impacts world market prices and thus our profit. That's why we have to keep on improving," says Aaron.

Around 12,000 kilometers away as the crow flies, Pappu Singh lives in a completely different world. Global trade? It exists in India too, of course, but it has no influence on how the farmer in Uttar Pradesh works. Pappu Singh grows green chili peppers, an ingredient everyone in the region uses in cooking, on his almost two-hectare farm. He sells them to a middleman for the market in neighboring Varanasi. The family experienced economic hardship two years ago. "We had little money for food and clothing," says the 53-year-old farmer from Mediya. He is angry at the system under which small-scale chili growers in the region suffer. "We can't understand how prices are arrived at, and unfortunately we don't always get the new and modern crop protection products that do a good job," he adds.

Smallholder farmers like Pappu Singh – unlike Aaron Gingerich in Illinois – lack knowledge of efficient seeds, innovative pesticides and

Indian farmer Pappu Singh (right) talking to Harmanpreet Singh from Bayer in India.

Corn growers in the United States face global competition. Watch our video to find out more: www.bayer.com/ar-corn

Middleman Rakesh Patel (on the left in the photo) sells Pappu Singh's harvest on the market in Varanasi. After the harvest, picker Surekha Devi gets the sack full of chili peppers ready for transport (photo below).

I'm very grateful to Bayer for the support. Now I know how to treat my plants properly, and I write everything down.

Pappu Singh

fertilizers, sustainable cultivation methods, and access to the market and microloans. That can have very serious consequences. It is not uncommon for the livelihoods of farmers and their families to be left hanging by a thread if their harvest is poor or is completely destroyed by bad weather. Bayer has stepped up its support for these very people, teaming up with partners in smallholder farming initiatives. There are around 500 million smallholder farmers worldwide – and they play a key role in guaranteeing food security for a growing global population. They produce around 80 percent of food in developing countries.

Pappu Singh is sitting in front of his house, with his dairy cows in sight, and is going through a small blue book together with Anand Pratap Shahi, the local representative from Bayer's Crop Science Division. He's noted in it when he planted which seed, which diseases and pests he has encountered, and how he treated the chili plants. Before, he had no idea about keeping accounts of income and expenses – or planning from cultivation to harvesting. "I'm very grateful to Bayer for the support," he says. "Our plants often used to suffer from fungal and viral diseases and only produced a small harvest or none at all. Now I know how to protect

and treat my plants properly, and I write everything down."

Through Bayer and its partners, he learned about the latest technology in crop protection and seeds, nutrient management and drip irrigation, and became familiar with good agricultural practices. As a result, he's been able to more than double his yield compared with the previous year and obtain fair prices for his produce after Bayer introduced him to new food retailers. That success gives Pappu Singh cause to look to the future with optimism. He can pay for an education for his two daughters, Ritika and Anshika. His eldest daughter would like to study medicine. He also has big plans for his modest farm. "I'd like to buy two hectares of extra land to give more people from my village work."

Back to Illinois, where Aaron Gingerich has since brought in a good harvest. Like Pappu Singh, he's pleased to make use of Bayer's advice. "Our support is in demand, in particular when it comes to containing weeds," says Terry Sorgenfrey from the Crop Science Division. Bayer's experts are part of the network that Aaron Gingerich has built over the years. "We always have questions," says Aaron. "Bayer supplies answers we can rely on."

What are the challenges that chili growers face in India? Our video at www.bayer.com/ar-chili shows how Bayer supports smallholder farmers.

Aaron Gingerich works on his farm in the Midwestern United States with the meticulousness of a scientist. He continuously tries out new, innovative technologies and trusts the advice of Bayer expert Terry Sorgenfrey.

Sunita and Manharan Singh, Pappu Singh's aunt and uncle, look after a dairy cow on the farm.

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Board of Management

Erica Mann [1]

Consumer Health

Erica Mann holds a degree in analytical chemistry and a marketing diploma from her studies in Johannesburg, South Africa. She began her career with Eli Lilly & Company and held positions at Johnson & Johnson, Lederle Laboratories and Wyeth before moving into senior management at Pfizer in the United States. She became head of Consumer Care at Bayer HealthCare in 2011. She was appointed to the Bayer Board of Management and head of the Consumer Health Division in January 2016.

Dieter Weinand

Pharmaceuticals

Dieter Weinand studied pharmacology, toxicology and biology in New York. After holding positions at various companies in the pharmaceutical industry, including Pfizer and Bristol-Myers Squibb, he was President Global Commercialization & Portfolio Management at Otsuka Pharmaceutical Development & Commercialization, Inc. in Princeton. In 2014, Weinand became head of the Pharmaceuticals Division at Bayer. He was appointed to the Bayer Board of Management in January 2016.

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.

Johannes Dietsch [2]

Finance

Johannes Dietsch completed his training with Bayer as a commercial assistant and business administrator in 1984. He subsequently held various managerial positions within the company, including one in Japan. In 2002, Dietsch took over as head of the Finance Department in the Corporate Center. He became Senior Bayer Representative and CFO of Bayer in China in 2011. He was appointed to the Bayer Board of Management in September 2014.

[1] Erica Mann will be leaving the company effective March 31, 2018, after which Heiko Schipper will become head of the Consumer Health Division.
[2] Johannes Dietsch will be leaving the company effective May 31, 2018. Wolfgang Nickl will become the new Chief Financial Officer from June 1, 2018.

Liam Condon

Crop Science

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

Kemal Malik

Innovation

Kemal Malik studied medicine and worked in a London hospital. After holding different positions of increasing responsibility at Bristol-Myers Squibb, he joined Bayer in 1995. In 2007, Malik became a member of the Executive Committee, head of Global Development and Chief Medical Officer of Bayer HealthCare. He was appointed to the Bayer Board of Management in February 2014.

Dr. Hartmut Klusik [3]

Human Resources · Technology Sustainability

Hartmut Klusik studied chemistry in Marburg. After gaining a Ph.D., he began his professional career at Wolff Walsrode in 1984. He transferred to crop protection production at Bayer in Brazil in 1990. Following assignments in the United States and Australia and after holding positions of increasing responsibility at Bayer CropScience, he was appointed to the Board of Management of Bayer HealthCare, with responsibility for Product Supply. He was appointed to the Bayer Board of Management in January 2016.

[3] Labor Director

Report of the Supervisory Board

During 2017, 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 of the Board of Management and with the other Management Board members. In this way the Supervisory Board was kept continuously informed about the company's intended business strategy, corporate planning (including financial, investment and human resources planning), earnings performance, the state of the business and the situation in the company and the Group.

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

Changes on the Supervisory Board

The terms of office of the Supervisory Board members Werner Wenning, Dr. Paul Achleitner, Dr. Clemens Börsig, Thomas Ebeling, Sue H. Rataj and Dr. Klaus Sturany ended at the end of the Annual Stockholders' Meeting on April 28, 2017. The Stockholders' Meeting re-elected Werner Wenning, Dr. Paul Achleitner, Thomas Ebeling and Dr. Klaus Sturany as members of the Supervisory Board, in all cases until the end of the Annual Stockholders' Meeting in 2022 except for Dr. Klaus Sturany, whose term will run until the end of the Annual Stockholders' Meeting in 2018. As successors to Dr. Clemens Börsig and Sue H. Rataj, the Stockholders' Meeting elected Dr. Norbert W. Bischofberger and Colleen A. Goggins, likewise until the end of the Annual Stockholders' Meeting in 2022.

Yüksel Karaaslan passed away on June 4, 2017. His seat on the Supervisory Board was taken by the elected substitute member Detlef Rennings. Petra Kronen left the Supervisory Board effective midnight on September 30, 2017, and was replaced by the elected substitute member Sabine Schaab.

Work of the Supervisory Board

The full Supervisory Board met nine times during 2017 and resolved in writing on a special election to the Human Resources Committee. No member of the Supervisory Board attended only half or fewer than half of its meetings or those of the committees on which he/she served. The average attendance rate by Supervisory Board members at the meetings of the full Supervisory Board and of its committees held in 2017 was approximately 95 percent. A detailed overview of the attendance of the individual members of the Supervisory Board at the meetings of the Supervisory Board and its committees is shown in the "Further Information" section under "Governance Bodies."

The members of the Board of Management regularly attended the meetings of the Supervisory Board. Where necessary, the Supervisory Board met without the Board of Management or with only the Chairman of the Board of Management present.

Werner Wenning, Chairman of the Supervisory Board of Bayer AG

The deliberations of the Supervisory Board focused on questions relating to Bayer's strategy, portfolio, business activities and personnel issues. A particular focus of the Supervisory Board's work was the Monsanto transaction, including the progress of the merger control proceedings, which were reported on extensively at several meetings. Between the meetings of the Supervisory Board, this issue was also the subject of an extensive exchange of information between the Chairman of the Supervisory Board and the Chairman of the Board of Management. The discussions at the respective meetings in 2017 centered on various topics.

At its February meeting, the Supervisory Board discussed the Annual Report 2016, the agenda for the Annual Stockholders' Meeting 2017 and the Bayer Group's risk management system, and adopted resolutions on reducing the interest in Covestro and on questions relating to the compensation of the Board of Management.

At an extraordinary meeting in April, the Supervisory Board passed a resolution to extend the appointment of the Chief Financial Officer, Johannes Dietsch, until May 31, 2018. At a further meeting in April, the Supervisory Board examined business performance to date in 2017, the targets for the proportion of women on the Board of Management, and the upcoming Annual Stockholders' Meeting. At its constitutive meeting following the Annual Stockholders' Meeting,

the Supervisory Board held the necessary elections of the Chairman and Vice Chairman of the Supervisory Board, and the Chairmen and members of the Supervisory Board committees.

At an extraordinary meeting in June, the Supervisory Board examined a further reduction of the stake in Covestro and adopted a resolution on this.

At its September meeting, the Supervisory Board appointed Wolfgang Nickl to the Board of Management effective April 26, 2018. Wolfgang Nickl will become Chief Financial Officer when Johannes Dietsch leaves the Board of Management. Further, the Supervisory Board discussed the development of the Brazilian Crop Science business, which had led to an ad-hoc statement in June on an expected negative earnings impact. The Supervisory Board agreed to undertake a further review of these occurrences, including the Board of Management's handling of the matter. At this meeting, the Supervisory Board also agreed to the conclusion of a control termination agreement with Covestro to ensure its deconsolidation effective September 30, 2017, and also decided to increase the size of the Innovation Committee to eight members.

At an extraordinary meeting in October, the Supervisory Board looked in detail at the planned divestment of part of the Crop Science business in connection with the ongoing merger control proceedings for the acquisition of Monsanto.

At another extraordinary meeting in November, the Supervisory Board appointed Heiko Schipper to the Board of Management effective March 1, 2018. He will head the Consumer Health Division when Erica Mann leaves the Board of Management. At this meeting, the Supervisory Board also discussed the in-licensing of two development candidates from the U.S. biotech company Loxo Oncology and the development of female managers in the Bayer Group.

At its meeting in December 2017, the Supervisory Board undertook the routine review of the fixed compensation of the members of the Board of Management and the pension amounts of the former members of the Board of Management. At this meeting, the Supervisory Board agreed that Erica Mann could leave the Board of Management effective March 31, 2018. The Board of Management furthermore presented its planning for business operations in the period 2018 through 2020 at this meeting, and reported on the financing concept for the Monsanto transaction, Monsanto's valuation and the impact of the transaction on the company's credit rating. The Supervisory Board approved the proposed financing framework for 2018. In addition, on the basis of two detailed reports to the Audit Committee and the associated discussions, the Supervisory Board held a further, final discussion on the developments at Crop Science in Brazil and the action taken by the Board of Management. Finally, the Supervisory Board elected two further members to the enlarged Innovation Committee and issued a new declaration on the German Corporate Governance Code.

Committees of the Supervisory Board

The Supervisory Board has a Presidial Committee, an Audit Committee, a Human Resources Committee, a Nominations Committee and an Innovation Committee. 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 plenary meeting. Certain decision-making powers in connection with capital

measures, including the power to amend the Articles of Incorporation accordingly, have also been delegated to this committee. On a case-by-case basis, furthermore, the Supervisory Board can delegate certain responsibilities to the Presidial Committee. Finally, the Presidial Committee may also undertake preparatory work for full meetings of the Supervisory Board.

No meeting of the Presidial Committee had to be convened in 2017.

Audit Committee: The Audit Committee comprises three stockholder representatives and three employee representatives. The Chairman of the Audit Committee in 2017, Dr. Klaus Sturany, meets the statutory requirements concerning the expertise in the field of accounting or auditing that a member of the Supervisory Board and the Audit Committee is required to possess. The Audit Committee meets regularly four times a year.

Its tasks include in particular oversight of the accounting, the financial reporting process, the effectiveness and ongoing development of the internal control system, the risk management system, the internal audit system, the compliance system and the audit of the financial statements. The Audit Committee prepares the resolutions of the Supervisory Board concerning the financial statements and management report of Bayer AG and the proposal for the use of the distributable profit, the consolidated financial statements and management report of the Bayer Group and the agreements with the auditor (particularly the awarding of the audit contract, the determination of the main areas of focus for the audit and the audit fee agreement). The committee submits a reasoned proposal to the full Supervisory Board concerning the auditor's appointment, and takes appropriate measures to determine and monitor the auditor's independence. The audit focuses particularly on whether the financial statements have been prepared in compliance with the statutory requirements and whether the financial reporting provides a true and fair view of the financial position and results of operations of the company and the Group.

The Audit Committee discusses developments in the area of corporate compliance at each of its meetings where necessary.

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 interim financial reports.

The meetings focused on a number of topics. 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, the report on the internal control system (ICS) and ongoing developments, especially the integrated risk management system. Further, the Audit Committee examined the development of legal and compliance cases. Finally, the Audit Committee made a recommendation to the full Supervisory Board concerning the resolution to be submitted to the Annual Stockholders' Meeting on the appointment of the auditor of the financial statements. The April meeting mainly dealt with the yearly report of the Group Compliance Officer, a report on a compliance project in China, the yearly report of the Internal Audit department and the determination of the main areas of focus for the audit of the 2017 financial statements.

The July meeting looked at the interim financial report and, in particular, the development of business at Crop Science in Brazil. Other topics discussed by the Audit Committee were information security, CSR reporting and the status of the ongoing random sampling of the consolidated financial statements as of December 31, 2016, and the combined management report for the 2016 fiscal year by the German Financial Reporting Enforcement Panel, which was ultimately completed without identifying any faulty reporting. Moreover, as at all meetings, legal and compliance issues were discussed. At its meeting in October, the Audit Committee once more discussed the development of the Brazilian Crop Science business in addition to the regular items on the agenda. Supplementary to its report at the July meeting, the Board of Management outlined the further development and responded to a number of questions that the Audit Committee

had submitted following the report at the previous meeting. Furthermore, the Audit Committee discussed the yearly report of the Tax department, the audit conducted pursuant to Section 20 of the German Securities Trading Act (WpHG) (EMIR), the audit budget for 2018 and the framework for non-audit services.

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

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

The Human Resources Committee convened on five occasions in 2017. The matters discussed were the compensation and contracts of the members of the Board of Management, the extension of the appointment of Johannes Dietsch, the upcoming departure of Erica Mann and the appointment of Wolfgang Nickl and Heiko Schipper 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. The Nominations Committee comprises the Chairman of the Supervisory Board and the other stockholder representative on the Presidial Committee.

The Nominations Committee did not meet in 2017. The members of the committee had discussed the recommended nominations to the Annual Stockholders' Meeting in December 2016.

Innovation Committee: The Innovation Committee is primarily concerned with the innovation strategy and innovation management, the strategy for the protection of intellectual property, and major research and development programs at Bayer. Within its area of responsibility, the committee advises and oversees the management and prepares any Supervisory Board decisions. The Committee comprises the Chairman of the Supervisory Board and five other members of the Supervisory Board, with parity of representation between stockholder and employee representatives. The Chairman of the Board of Management and the member of the Board of Management responsible for Innovation regularly attend the meetings of the Innovation Committee.

The Innovation Committee convened twice in 2017. At its February meeting, it dealt with the research and development process in the Pharmaceuticals Division, especially the organization and strategy in the area of drug discovery. At its meeting in September, it examined the Consumer Health Division's innovation concept and open innovation at Pharmaceuticals and Crop Science.

Corporate governance

The Supervisory Board dealt with the principles of corporate governance at Bayer. In particular, at its December meeting it discussed the implementation of the new recommendations of the German Corporate Governance Code and adopted corresponding changes to its rules of procedure. In December, the Board of Management and the Supervisory Board again issued an unreserved declaration on the German Corporate Governance Code. Further, at the meetings of the Supervisory Board the Chairman of the Supervisory Board gave a summary of his dialog with investors.

Financial statements and audits

The financial statements of Bayer AG were prepared according to the requirements of the German Commercial Code and Stock Corporation Act. The consolidated financial statements of the Bayer Group were prepared according to the German Commercial Code and the International Financial Reporting Standards (IFRS). The combined management report was prepared according to the German Commercial Code. The auditor, Deloitte GmbH Wirtschaftsprüfungsgesellschaft, Munich, has audited the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report. The auditor responsible for the audit was Prof. Frank Beine. The conduct of the audit is explained in the auditor's reports. The auditor finds that Bayer has complied, as appropriate, with the German Commercial Code, the German Stock Corporation Act and / or the International Financial Reporting Standards endorsed by the European Union, and issues an unqualified opinion on the financial statements of Bayer AG, the consolidated financial statements of the Bayer Group and the combined management report. The financial statements of Bayer AG, the consolidated financial statements of the Bayer Group, the combined management report and the audit reports were submitted to all members of the Supervisory Board. They were discussed in detail by the Audit Committee and at a meeting of the full Supervisory Board. The auditor submitted a report on both occasions and was present during the discussions.

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

We have approved the financial statements of Bayer AG and the consolidated financial statements of the Bayer Group prepared by the Board of Management. The financial statements of Bayer AG are thus confirmed. We are in agreement with the combined management report and, in particular, with the assessment of the future development of the enterprise. We also concur with the dividend policy and the decisions concerning earnings retention by the company. We assent to the proposal for the use of the distributable profit, which provides for payment of a dividend of €2.80 per share and for the distributable profit remaining after this payment to be carried forward.

The Supervisory Board would like to thank the Board of Management and all employees for their dedication and hard work in 2017.

Leverkusen, February 27, 2018
For the Supervisory Board

Werner Wenning
Chairman

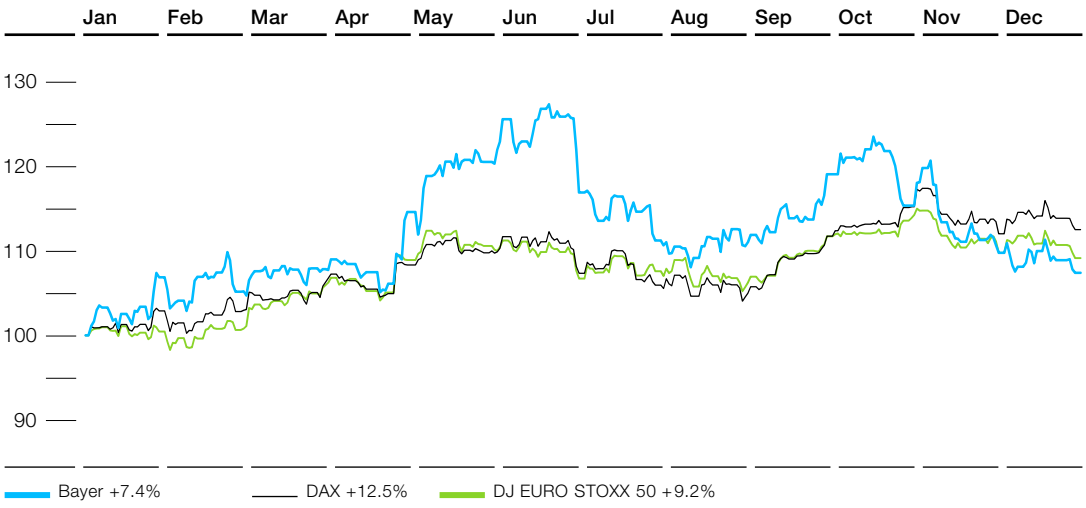
Investor Information

Bayer stock delivers returns of 7.4% in 2017
Positive financing environment for bonds
Dividend increase to €2.80 per share proposed

1

Performance of Bayer Stock in 2017

Indexed; 100 = Xetra closing price on December 31, 2016, source: Bloomberg



The Stock Market in 2017

Stock markets achieve positive performance

2017 was a year of strong gains on stock markets. Buoyed by a growing global economy, performance was yet again driven by expansionary monetary policy, with the European Central Bank (ECB) in particular playing a key role here. As a result, interest rates in Europe remained at a low level. In contrast, the U.S. Federal Reserve hiked interest rates three times, in a move that signals a sustained departure from low interest rates in the United States. The impact of global uncertainties, such as elections in Europe, Brexit risks and geopolitical factors, on the performance of the stock markets began to fade over the course of the year. The German stock index DAX, for instance, grew for the sixth year in a row. Share prices rose strongly through June, with the DAX up by around 12 percent at almost 13,000 points, before it fell below 12,000 points in August. However, stocks started to rise again in September, with the index hitting a record high of around 13,500 points in November. The DAX stood at 12,918 points at the end of the last trading day of the year, representing growth of around 13 percent over the course of the year.

Following a similar path, the European equities index EURO STOXX 50 (performance index) rose around 9 percent, ending the year at roughly 7,049 points. Meanwhile, the S&P 500 and Nikkei 225 indices were up by around 19 percent, indicating that stock markets in the United States and Japan also performed very strongly.

Performance of Bayer stock

Bayer shares posted moderate gains through early April, when they hit the €108 mark, after which they continued to rise until they reached their high for the year of €123.30 on July 19. The company's share price then declined until early August, before rising again to around €120 in mid-October. Bayer stock closed the year at €104. Including the dividend of €2.70 per share paid at the end of April, Bayer stock delivered a return of 7.4 percent.

2

Bayer Stock Data

		2016	2017
Earnings per share from continuing and discontinued operations	€	5.44	8.41
Core earnings per share from continuing operations [1]	€	6.67	6.74
Cash flow from operating activities in continuing operations per share	€	7.78	7.99
Equity per share	€	45.05	44.57
Dividend per share	€	2.70	2.80
Year-end price [2]	€	99.13	104.00
High for the year [2]	€	111.25	123.30
Low for the year [2]	€	84.42	100.00
Total dividend payment [3]	€ million	2,233	2,315
Number of shares entitled to the dividend (Dec. 31)	million shares	826.95	826.95
Market capitalization (Dec. 31)	€ billion	82.0	86.0
Average daily share turnover on German stock exchanges	million shares	2.7	2.0
Price / EPS [2]		18.2	12.4
Price / core EPS [2]		14.9	15.4
Price / cash flow [2]		12.7	13.0
Dividend yield	%	2.7	2.7

2016 figures restated

[1] For details on the calculation of core earnings per share see Combined Management Report, Chapter A 2.4

[2] Xetra closing prices (source: Bloomberg)

[3] If the planned capital increase or other capital measures are completed by the 2018 Annual Stockholders' Meeting, with the issue of new shares carrying dividend rights for fiscal 2017, the total dividend payment will be increased by the total dividends to be paid to the newly issued shares, with the dividend per share remaining unchanged.

Financing environment remains positive

2017 was a year that saw record demand for euro-denominated investment-grade bonds. Buoyed by the ECB's bond-buying program, risk premiums hit historic lows while premiums on new issues were in single digits or even negative territory. As before, yields remain in negative territory for a high range of maturities.

Bayer redeemed all bonds maturing in 2017 without direct refinancing, while also early redeeming a €750 million bond that was originally due to mature in January 2018. JPY 20 billion in bonds were issued in May as part of a private placement.

In addition, bonds that may alternatively be redeemed in Covestro shares were issued in June. Maturing in 2020, they amounted to €1 billion. This exchangeable bond helps Bayer to implement its goal of achieving full separation from Covestro in the medium term and to obtain financing at highly advantageous conditions.

Further details of all outstanding bonds are given in the consolidated financial statements.

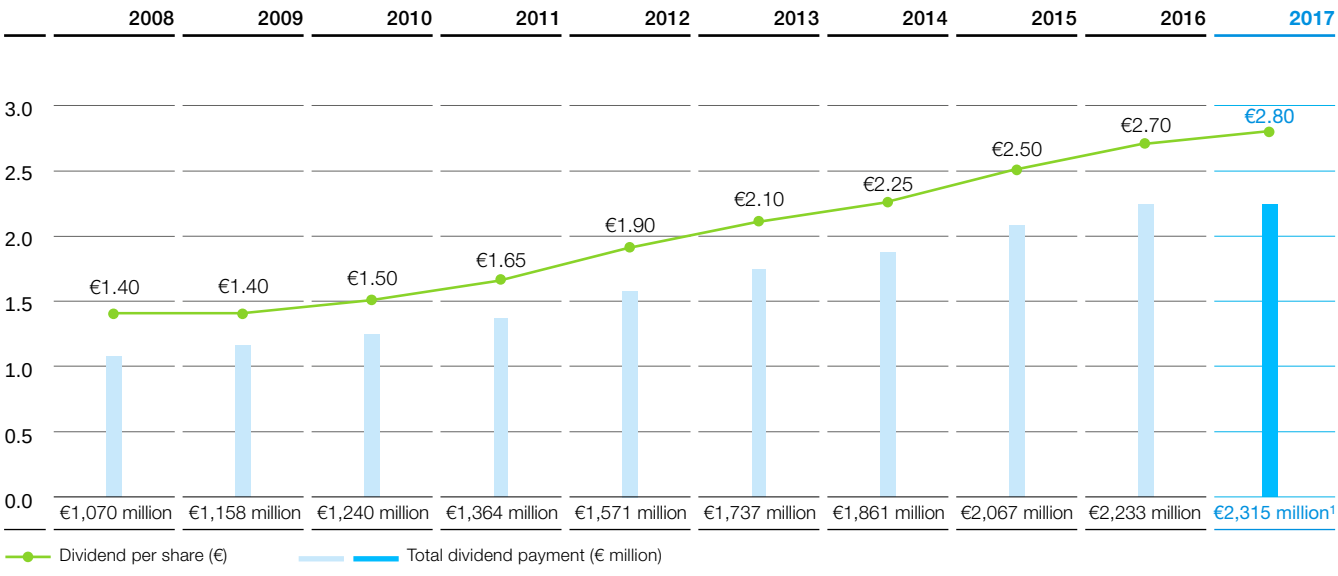
Four percent dividend increase to €2.80 per share

The Board of Management and the Supervisory Board will propose to the Annual Stockholders' Meeting that the dividend be increased by €0.10 to €2.80 per share. Through the move, we aim to enable our stockholders to appropriately participate in the positive business performance of the past fiscal year, despite the revised forecast following the second quarter and the planned capital increase. The resulting payout ratio of around 42 percent[1] calculated on core earnings per share exceeds our target corridor of 30 to 40 percent.

The dividend yield calculated on the share price at year end 2017 amounts to 2.7 percent.

3

Dividends Per Share and Total Dividend Payments



[1] If the planned capital increase or other capital measures are completed by the 2018 Annual Stockholders' Meeting, with the issue of new shares carrying dividend rights for fiscal 2017, the total dividend payment will be increased by the total dividends to be paid to the newly issued shares, with the dividend per share remaining unchanged.

GRI G4-26, G4-27

Intensive investor relations activities

Last year, our investor relations (IR) activities once again centered around providing capital market participants with a continuous flow of information. Main areas of focus of our communications included the positive results from the COMPASS study on Xarelto™, the negative results for anetumab ravtansine and Xofigo™, and explaining the development in Brazil at our Crop Science Division, which, together with the challenging situation at Consumer Health, prompted us to revise our forecast halfway through the year. Other topics included Bayer reducing its interest in Covestro, while the planned acquisition of Monsanto continued to be addressed. Against this backdrop, we received a great many questions from capital market participants, mainly concerning the financing of the Monsanto acquisition. Here, questions on the capital increase scheduled for 2018 and the progress made in reviews being conducted by antitrust authorities were particularly prevalent.

At the Meet Management conference in London in March, institutional investors and analysts had the chance to engage in direct dialogue with Bayer's top management, as they have done in previous years. We took part in 19 conferences in total last year, as well as seven roadshows and one field trip. New York, Boston, San Francisco, London, Paris, Zurich, Frankfurt, Stockholm, Copenhagen and Singapore were just some of the cities we went to.

Private investors also had an opportunity to find out about our company at various stockholder forums at which the Investor Relations team was present.

A sustainable investment

GRI G4-26, G4-27

We continued our open communication with sustainability-oriented investors, analysts and rating agencies in 2017. Against the backdrop of the planned acquisition of Monsanto, the focus of capital market participants turned to business ethics, reputation and the future sustainability strategy. Other important subjects included product stewardship and safety, access to medicines and our responsibility toward the environment.

Bayer's inclusion in the Dow Jones Sustainability World Index and FTSE4Good (Europe, Global and Environmental Leaders Europe 40), two important sustainability indices, was confirmed. Bayer also continues to be listed on the MSCI World Low Carbon Target Index, the STOXX® Europe Sustainability Index and the STOXX® Global ESG Impact index. In addition, in 2017 Bayer was again evaluated by the CDP (Carbon Disclosure Project) as one of the leading international pharmaceutical companies in the areas of climate protection and sustainable water management.

www.bayer.com/en/awards.aspx

Ratio switch in ADR Program

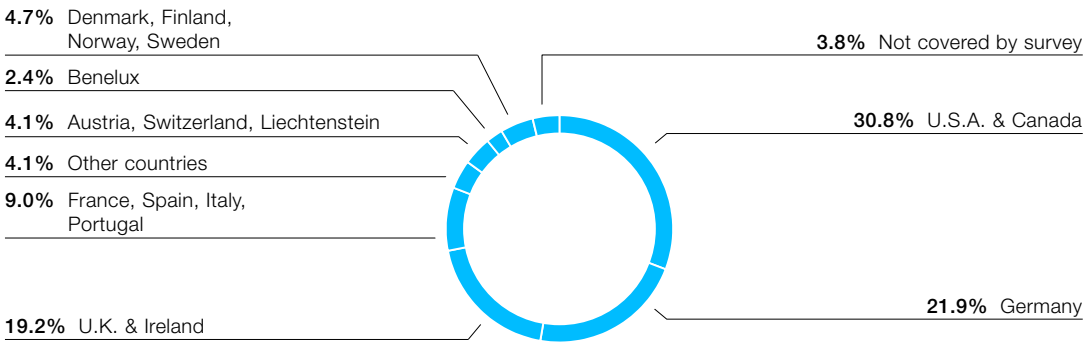
Bayer shares are traded in the United States under an OTC Level I ADR (American Depositary Receipts) Program. The ratio of Bayer shares to Bayer ADRs was changed in September 2017. Four Bayer ADRs now correspond to one Bayer share. The move improved tradeability, and by a greater extent than we had anticipated.

International ownership structure

Our ownership structure continues to show the international distribution of our capital stock. The highest proportion of our outstanding shares, almost 31 percent, is held by investors in the United States and Canada, followed by Germany, with about 22 percent. Bayer has a 100-percent free float as defined by Deutsche Börse, the operator of the Frankfurt Stock Exchange. The number of Bayer stockholders declined marginally in 2017. At the end of 2017, approximately 343,000 stockholders were listed in our share register – a decline of around 4 percent compared with the previous year.

4

Shareholder Composition – Regional Allocation



Source: IPREO

About this Report

This integrated Annual Report combines our financial and our sustainability reporting. Our aim is to elucidate the interactions between financial, ecological and societal factors and underline their influence on our company's long-term development, thus providing our stakeholders with comprehensive and transparent information on our performance.

Legal principles and reporting standards

The consolidated financial statements of the Bayer Group as of December 31, 2017, comply with the International Financial Reporting Standards (IFRS), as adopted by the E.U., valid at the closing date and with the provisions of the German Commercial Code in conjunction with German financial reporting standards (DRS). With due regard to these provisions, the combined management report provides an accurate overview of the financial position and results of operations of the Bayer Group. The Compensation Report for the Board of Management and the Supervisory Board complies with the recommendations of the German Corporate Governance Code. The consolidated financial statements and the combined management report are published in the Federal Gazette in line with the statutory disclosure requirement.

The Bayer Group's sustainability reporting has been aligned to the guidelines of the Global Reporting Initiative (GRI) and the 10 principles of the U.N. Global Compact (UNGC) since 2000. The Annual Report 2017 was prepared in accordance with the "comprehensive" option of the GRI-G4 Guidelines. The detailed GRI content index with the corresponding UNGC principles can be found in the augmented online version of the Annual Report under "C Further Information." This index assigns Bayer's areas of activity derived from the materiality analysis to key GRI aspects. This report also serves as a Communication on Progress (COP) in line with the U.N. Global Compact.

Our reporting is also aligned to international guidelines and recommendations, including those on the definition and selection of nonfinancial indicators and on reporting such as those of the OECD and the ISO 26000 standards. In selecting and measuring our key data we also take into account the recommendations of the European Federation of Financial Analysts Societies (EFFAS) in the case of nonfinancial indicators, and those of the Greenhouse Gas Protocol regarding greenhouse gas emissions. We also consider the recommendations of the World Business Council for Sustainable Development (WBCSD) and the European Chemical Industry Council (CEFIC).

CSR Directive Implementation Act

Pursuant to the CSR Directive 2014/95/EU published in the Official Journal of the European Union, certain publicly traded companies are required for the first time to publish a nonfinancial statement for the fiscal year beginning on or after January 1, 2017. The aim of this is to achieve a better understanding of business development and context as well as future developments of the company. German lawmakers approved the implementation of the Directive as the CSR Directive Implementation Act (CSR-RUG) and transposed it into German law (Section 289 et seqq. of the German Commercial Code for individual companies and Section 315b et seqq. of

the German Commercial Code for consolidated financial statements).

In addition to a brief description of the business model, the Act requires the preparation of a nonfinancial statement containing information relating to at least environmental, employee-related and social aspects, as well as respect for human rights, anticorruption and bribery matters (Section 289c of the German Commercial Code). We have also prepared the nonfinancial statement in line with GRI-G4 Guidelines (Section 289d of the German Commercial Code).

On account of our reporting already being integrated, we have included the nonfinancial statement in the combined management report of our Annual Report, which covers data for the Bayer Group and Bayer AG as the parent company. The legality, accuracy and expediency of the nonfinancial statement has been verified by the Supervisory Board.

An index to the nonfinancial statement pursuant to the CSR Directive Implementation Act in A 4.6 provides an overview of where you can find the disclosures required by law (business model / concept and risks pertaining to the aspects / diversity concept) in the combined management report. The index also provides an overview of the corresponding areas of activity at Bayer in relation to the aspects set forth in the Act.

Owing to the increased importance of Bayer AG within the Group, the disclosure of significant nonfinancial information is also mandatory for the parent company Bayer AG. The relevant nonfinancial data and other key figures for Bayer AG are contained in A 1.4.4.

Versions of the report

We provide the integrated Bayer Annual Report 2017 in two audited versions:

- in a print version (“Annual Report 2017”)
- and an augmented online version (“Annual Report 2017 – Augmented Version”).
  The augmented version also includes additional information in the management report as well as Bayer’s consolidated financial statements.

The print version contains numbered ⌄ **online annexes** which refer the reader to additional information in the Augmented Version. You can enter these numbers in a search mask on www.bayer.com / AR2017 to access the desired information.

Both versions of the Annual Report are available in PDF format for download from the Bayer website.

The “Annual Report 2017 – Augmented Version” can be found at www.bayer.com/AR17

The app of the “Annual Report 2017 – Augmented Version” is available on the iTunes and Google Play stores. Please search for “Bayer Integrated Reports.”

Data collection and reporting thresholds

We collected the data of all relevant organizational units and companies worldwide that fell within the scope of the Bayer Group's consolidated financial statements between January 1, 2017, and December 31, 2017.

Bayer ceded de facto control over Covestro AG at the end of the third quarter of 2017. Covestro is no longer a reportable segment of the Bayer Group and is now presented as a discontinued operation until the date of its deconsolidation.

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 applies to HR and HSE (health, safety and environment) indicators and our social data. Prior years' figures were restated as necessary.

We mainly use SAP systems to collect financial data worldwide. We use the global SAP HR information system and the associated reporting application – the Sustainability Management Annual Reporting Tool (SMART) – to collect HR indicators and social data.

GRI G4-17

All HSE performance indicators for the Group are collated in our Group-wide site information system (BaySIS). The HSE data cover all fully consolidated companies in which Bayer owns at least 50% of the shares. Data on occupational injuries, transport accidents and environmental incidents are collected at all sites worldwide. Environmentally relevant indicators are measured at all production sites and at relevant research and development sites.

Several nonfinancial indicators (particularly related to employees and procurement) are reported only for our significant locations of operation in line with the requirements of the corresponding GRI indicators. In 2017, this covered 18 countries that accounted for more than 80% of total Bayer Group sales.

GRI G4-22

External verification

The auditing company Deloitte GmbH Wirtschaftsprüfungsgesellschaft (Deloitte), Munich, Germany, has audited the consolidated financial statements (including the notes thereto) of Bayer AG, Leverkusen, and the combined management report for the fiscal year from January 1, 2017, to December 31, 2017, and has issued an unqualified opinion (reasonable assurance). The audit also includes the disclosures pertaining to the nonfinancial statement pursuant to Section 315c of the German Commercial Code in conjunction with Section 289c of the German Commercial Code.

All the online annexes that supplement the management report in the augmented online version of the Bayer Annual Report 2017 ("Annual Report 2017 – Augmented Version") for the fiscal year from January 1, 2017, to December 31, 2017, have been reviewed by Deloitte on a limited assurance basis. The corresponding text passages are marked in the augmented online version of the Annual Report with "limited assurance."

Additional information

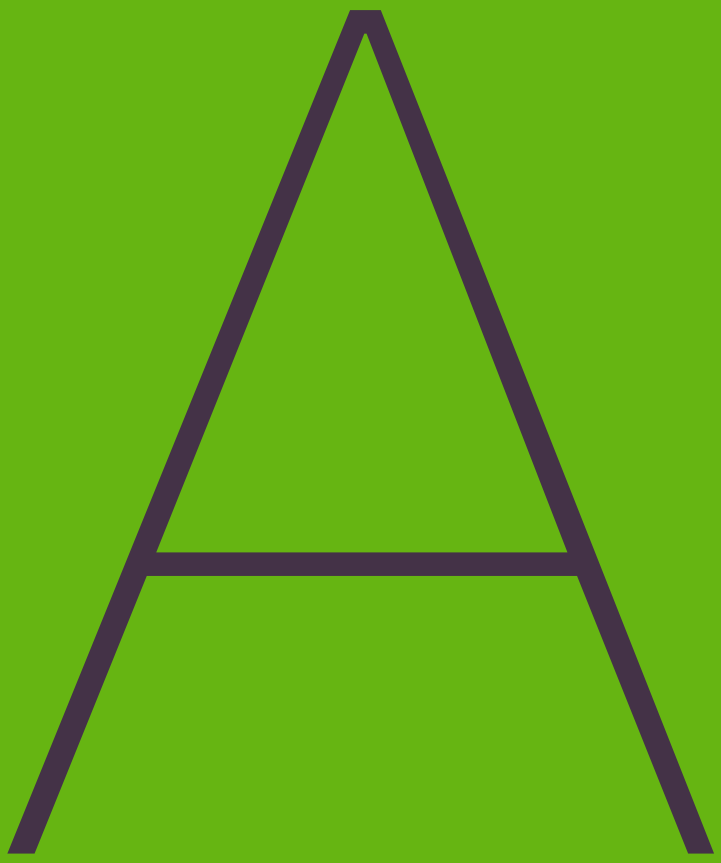
- As the indicators in this report are stated in accordance with commercial rounding principles, totals and percentages may not always be exact.
- For further guidance, the Annual Report contains references to:

Cross-references within the Annual Report

References to websites

Group target

GRI references



Combined Management Report

of the Bayer Group and Bayer AG
as of December 31, 2017

1. Fundamental Information About the Group

1.1 Corporate Profile and Structure

The foundation for our success: innovation strength

Bayer actively supports efforts to achieve U.N. Sustainable Development Goals

Covestro no longer a part of operating business

1.1.1 Corporate Profile

Bayer is a life science company with a more than 150-year history and core competencies in the areas of health care and agriculture. With our innovative products, we are helping find solutions to some of the major challenges of our time. With life expectancy continuing to rise, we improve quality of life for a growing population by focusing our research and development activities on preventing, alleviating and treating diseases. We are also making an important contribution to providing a reliable supply of high-quality food, feed and plant-based raw materials.

Our goal is to create value for our customers, stockholders and employees, while also strengthening the company's earning power. We are committed to operating sustainably and addressing our social and ethical responsibilities. Employees with a passion for innovation enjoy excellent development opportunities at Bayer. All this goes to make up our corporate purpose: "Science for a better life."

Our corporate values guide us in our daily activities. Represented by the acronym **LIFE** (**L**eadership, **I**ntegrity, **F**lexibility and **E**fficiency), these values apply to everyone at Bayer and are firmly integrated into our global performance management system. Our value culture ensures a common identity throughout the enterprise across national boundaries, management hierarchies and cultural differences.

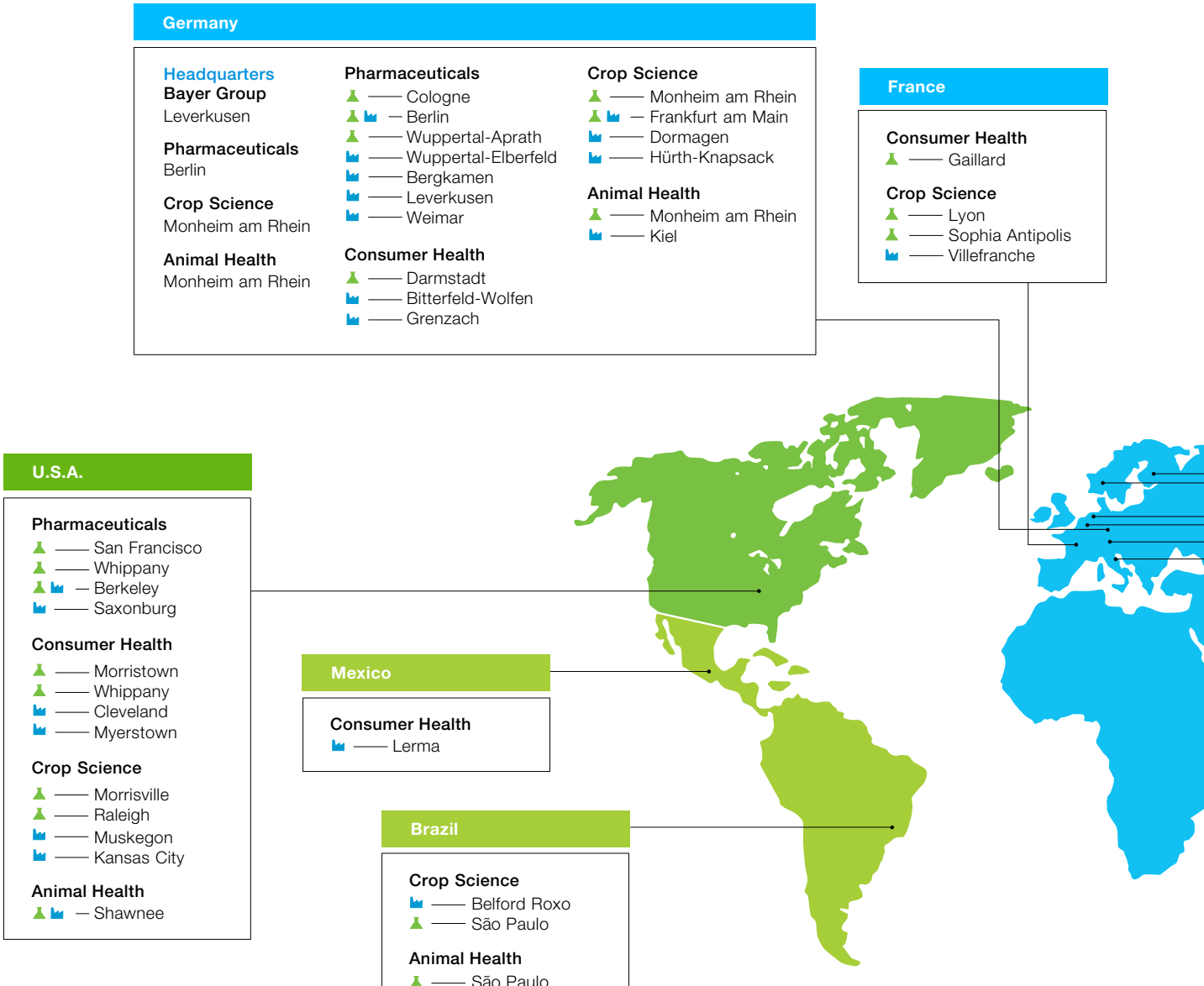
Bayer Worldwide 2017

North America

Sales **€10,143** (2016: 10,066) million
Employees **13,001** (2016: 13,212)
R&D [1] **€1,015** (2016: 1,009) million

Latin America

Sales **€3,847** (2016: 4,402) million
Employees **11,587** (2016: 12,120)
R&D [1] **€63** (2016: 70) million



2016 figures restated
[1] Research and development expenses
[2] Transition to Kunming in 2018
Significant research and development location (selection)
Significant production location (selection)

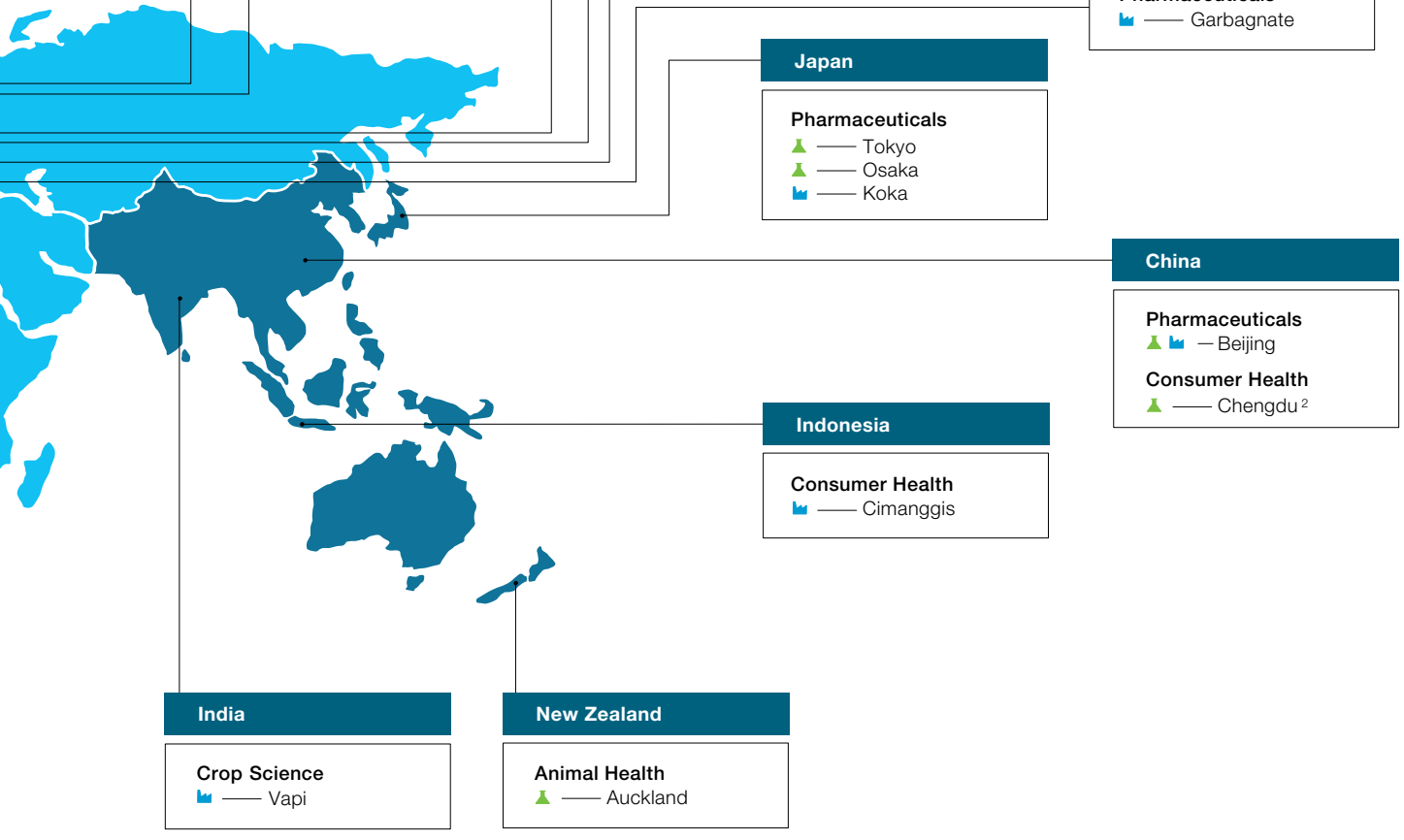
A 1.1.1/1

Europe / Middle East / Africa

Sales **€13,388** (2016: 13,062) million
Employees **52,380** (2016: 50,970)
R&D [1] **€3,295** (2016: 3,182) million

Asia / Pacific

Sales **€7,637** (2016: 7,413) million
Employees **22,852** (2016: 23,290)
R&D [1] **€131** (2016: 144) million



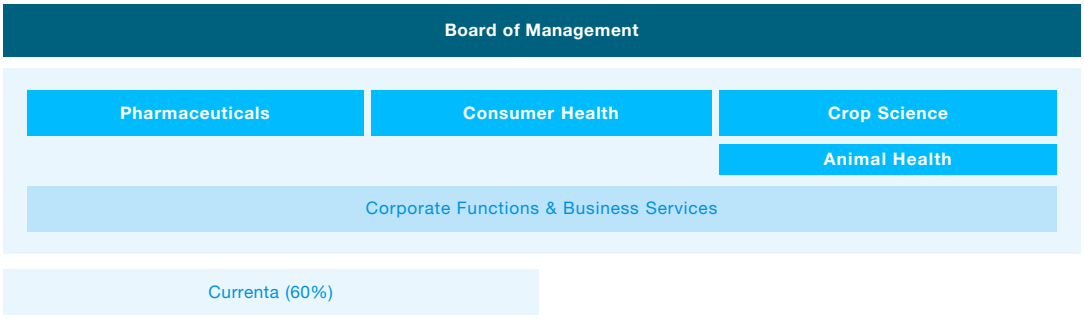
1.1.2 Corporate Structure

Corporate structure as of December 31, 2017

The Bayer Group is managed as a life science company with three divisions – Pharmaceuticals, Consumer Health and Crop Science – and the Animal Health business unit, which are also our reporting segments. The corporate functions, Business Services and the service company Currenta support the operational business. In 2017, the Bayer Group comprised 237 consolidated companies in 79 countries throughout the world. As described in further detail below, Bayer's interest in Covestro AG stood at 24.6% as at the end of the reporting period. Covestro is no longer a reportable segment and has been accounted for using the equity method as of the beginning of the fourth quarter of 2017.

A 1.1.2/1

Bayer Group Structure in 2017



The **Pharmaceuticals** segment focuses on prescription products, especially for cardiology and women's health care, and on specialty therapeutics in the areas of oncology, hematology and ophthalmology. The division also comprises the radiology business, which markets diagnostic imaging equipment together with the necessary contrast agents.

The **Consumer Health** segment markets nonprescription (OTC = over-the-counter) medicines, medical products and cosmetics in the dermatology, nutritional supplement, analgesic, digestive health, allergy, cold, foot care and sun protection categories.

Vector control: see Glossary

Crop Science is a world-leading agriculture enterprise with businesses in crop protection, seeds and nonagricultural pest control. The Crop Protection / Seeds unit markets a broad portfolio of high-value seeds and innovative pest management solutions, while at the same time providing extensive customer service for sustainable agriculture. The Environmental Science unit provides products and services for professional nonagricultural applications, such as vector and pest control and forestry.

Animal Health ranks among the leading international innovators in its field. It develops and markets products and solutions for the prevention and treatment of diseases in companion and farm animals.

The **corporate functions** and **Business Services** operate as Group-wide competence centers in which business support services are bundled. **Currenta** is the service company responsible for managing and operating the Chempark sites in Leverkusen, Dormagen and Krefeld-Uerdingen.

Online Annex: A 1.1.2-1

A 1.1.2-1/1

Products and Activities of the Segments

Indication / Application / Business	Core activities and markets	Main products and brands[1]
Pharmaceuticals		
Cardiology	Hypertension, pulmonary hypertension, heart attack and stroke, thrombosis	Xarelto™, Adalat™, Aspirin™ Cardio, Adempas™
Oncology	Liver cancer, renal cell carcinoma, thyroid carcinoma, prostate cancer, colorectal cancer, gastrointestinal stromal tumors (GIST), follicular lymphoma	Nexavar™, Xofigo™, Stivarga™, Aliqopa™
Ophthalmology	Age-related macular degeneration (AMD), diabetic macular edema (DME)	Eylea™
Hematology	Hemophilia A	Kogenate™ / Kovaltry™
Women's health	Contraception, gynecological therapy	Mirena™ product family, Yaz™ / Yasmin™ / Yasminelle™
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™
Other indications	Multiple sclerosis	Betaferon™ / Betaseron™
Consumer Health		
Dermatology	Wound care, skin care, skin and intimate health	Bepanthen™, Canesten™
Nutrition	Multivitamin products, dietary supplements	One A Day™, Elevit™, Berocca™, Supradyn™, Redoxon™
Analgesics	General pain relief	Aspirin™, Aleve™
Digestive health	Gastric complaints	MiraLax™, Rennie™, Iberogast™
Allergy	Allergies	Claritin™
Cough and cold	Cough and cold	Aspirin™, Alka-Seltzer™, Afrin™
Foot care	Foot care	Dr. Scholl's™
Sun care	Sun protection	Coppertone™
Crop Science		
Fungicides	Biological and chemical products to protect crop plants from fungal diseases	Flint™, Fox™, Luna™, Nativo™, Prosaro™, Serenade™, Xpro™
Insecticides	Biological and chemical products to protect crop plants from harmful insects and their larvae	BioAct™, Confidor™, Movento™, Sivanto™
Herbicides	Chemical crop protection products to control weeds	Adengo™, Alion™, Basta™, Corvus™, Liberty™, Atlantis™
SeedGrowth	Biological and chemical seed treatments to protect against fungal infection and pests	CropStar™, Gaucho™, Poncho™, Sonido™
Seeds	Seeds and traits for cotton, canola, rice, soybeans, wheat and vegetables	Arize™, Credenz™, FiberMax™, InVigor™, Nunhems™, Stoneville™
Environmental Science	Products for professional pest control, vector control, forestry, golf courses and parks, railway tracks	Ficam™, Maxforce™, Esplanade™, K-Othrine™
Animal Health		
Companion animals business	Veterinary medicines and solutions to protect and maintain the health and wellbeing of companion animals, focusing on antiparisitics and anti-infectives	Advantage™ product family, Seresto™, Drontal™ product family, Baytril™
Farm animals business	Veterinary medicines and solutions to treat and prevent parasitic diseases, anti-infectives, immunostimulants, pharmacological treatments and farm hygiene products	Baytril™, Cydectin™

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

Management functions of Bayer AG

As the parent company of the Bayer Group, Bayer AG – represented by its Board of Management – performs the principal management functions for the entire company. 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 segments. Business lease agreements between Bayer AG on the one hand, and Bayer Pharma AG and Bayer CropScience AG – the former parent companies of the respective divisions – on the other, have been in place since the start of 2017 and govern the transfer of their operational business to Bayer AG. This means that, alongside the holding company function it has performed to date, Bayer AG also performs the corresponding parent company functions in relation to Pharmaceuticals and Crop Science.

Changes to the corporate structure in connection with Covestro

In fiscal 2017 we reduced our interest in Covestro AG from 64.2% to 24.6%. Over the course of the year, we sold 35.6% of the shares in this company in four tranches, raising approximately €4.7 billion in total. In addition, we deposited a further 4% of the shares in Bayer Pension Trust e.V., which now holds an interest of 8.9%.

Furthermore, we sold an additional 10.4% of Covestro shares in January 2018, in a move that reduced our direct interest to 14.2%. This transaction generated overall proceeds of €1.8 billion.

As a result of the reduction undertaken through September 30, 2017, and the conclusion of a control termination agreement, Bayer ceded de facto control over Covestro AG at the end of the third quarter. Accordingly, Covestro was deconsolidated and presented as an associate for the first time. Covestro is no longer a reportable segment and is presented as a discontinued operation until the date of its deconsolidation. The financial information for the periods preceding the deconsolidation, including the comparative prior-year figures, has been restated accordingly.

GRI G4-22

Changes to the corporate structure in connection with the planned acquisition of Monsanto

On September 14, 2016, we signed a binding agreement to acquire the Monsanto Company. Monsanto's shareholders approved the merger on December 13, 2016, during an extraordinary stockholders' meeting. In 2017, Bayer received half of the regulatory approvals that it applied for, obtaining clearance in Colombia, Ecuador, Israel, Paraguay, the Philippines and South Africa, for instance. We are collaborating with the authorities and continue to work toward closing the transaction in the second quarter of 2018.

In October 2017, Bayer signed an agreement to sell selected Crop Science businesses to BASF for €5.9 billion in light of the planned acquisition of Monsanto. The assets to be sold include Bayer's global glufosinate-ammonium business and the related LibertyLink™ technology for herbicide tolerance, a substantial part of the field crop seed businesses, as well as respective research and development capabilities. The transaction is subject to regulatory approval as well as the successful closing of Bayer's acquisition of Monsanto. Bayer will continue to own, operate and maintain these businesses until the closing of this divestiture. The assets and liabilities are classified as held for sale. Aside from this, the company's situation is presented in this report with the respective Crop Science businesses included. The potential impact of the divestments will not be outlined in further detail.

Field crops:
see Glossary

In connection with the planned acquisition of Monsanto and in preparation for the future combined business, the structure of the Crop Science segment was adjusted as of January 1, 2018. In the new structure, all the strategic business entities – including the Herbicides, Fungicides, Insecticides and SeedGrowth businesses – are organizationally located directly below the Crop Science segment. Crop Protection / Seeds will cease to exist, as will the intermediate Crop Protection level below it. Moreover, the business entities within Seeds (including Traits) will from now on be regarded individually and not jointly. In line with this, Vegetable Seeds will be reported separately. Given their current size, the other Seeds businesses – comprising Corn Seed & Traits, Soybean

Seed & Traits, Cotton Seed & Traits, Oilseeds & Traits and Other Seeds & Traits – will be grouped together under Other (Seeds & Traits). Environmental Science will be presented separately on the same level as the other strategic business entities. The new reporting structure will be reviewed again upon conclusion of the acquisition of Monsanto and will be modified in line with the framework conditions prevailing at that point in time.

A comparison of the previous and new reporting structures of Crop Science is shown in graphic A 1.1.2/2.

A 1.1.2/2

Comparison of Previous and New Crop Science Structure

Structure until Dec. 31, 2017	Structure from Jan. 1, 2018
Crop Protection / Seeds	–
Crop Protection	–
Herbicides	Herbicides
Fungicides	Fungicides
Insecticides	Insecticides
SeedGrowth	SeedGrowth
Seeds	–
–	Vegetable Seeds
Environmental Science	Environmental Science
–	Other (Seeds & Traits)
Crop Science total	**Crop Science total**

Reporting for fiscal 2017 applies the structure in place until December 31, 2017.

1.1.3 Value Creation

By delivering innovative products and solutions, Bayer creates value for its stakeholders at all stages of the value chain. We operate production sites worldwide, invest in research and development, work with international and local suppliers and contribute to the economic development of our target markets. As an employer, we provide jobs in industrialized, emerging and developing economies and create purchasing power through the salaries we pay. We contribute to public finances and thus support public infrastructure through the payment of taxes and other levies.

See also A 1.4.2

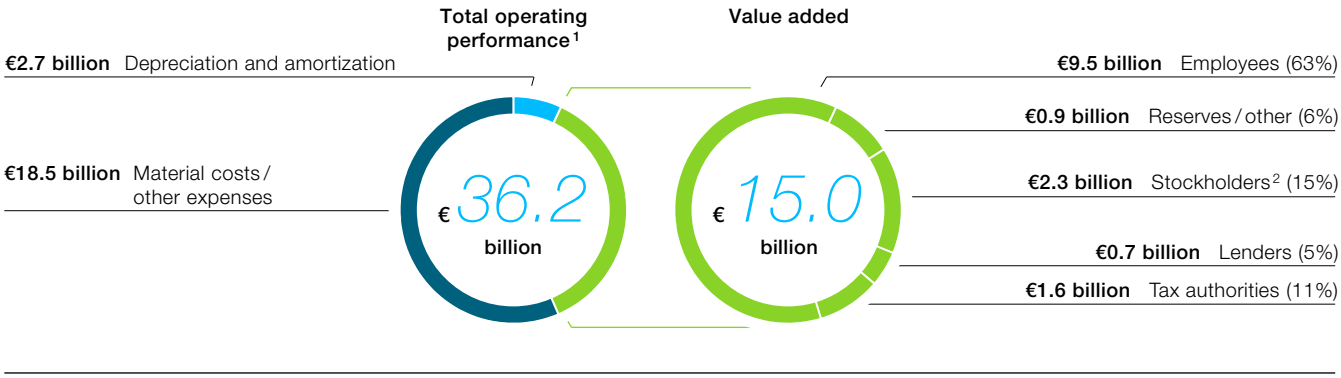
A 1.1.3/1

Value Chain Stages

The value added statement shows the direct financial value our business activities create for our stakeholders. We define value added as the company's total operating performance in the previous fiscal year less the costs of procured and consumed goods and services, depreciation, amortization, impairment losses and impairment loss reversals.

A 1.1.3/2

Bayer Group Value Added 2017



[1] Total operating performance = sales + other operating income + financial income / equity-method income (loss)
[2] Bayer AG dividend proposal for 2017

1.2 Strategy and Management

Corporate strategy targets long-term profitable growth
Group targets reflect our integrated business approach
Sustainability management underpins all business activities

1.2.1 Group Strategy and Targets

The steadily growing and aging global population presents fundamental challenges in health care and nutrition. How will we feed up to ten billion people by 2050 while contending with the impact of climate change? How will we ensure quality of life for an ever-increasing number of elderly people?

These are the challenges that we are looking to address. In line with our corporate purpose “Science for a better life,” we are driving the development of better medicines and the production of high-quality food through innovative solutions. Alongside our goal of achieving economic success, we also seek to make a responsible contribution to the United Nations Sustainable Development Goals of “Good Health and Well-Being” and “Zero Hunger” within the scope of our entrepreneurial possibilities.

We strive to meet our responsibility to the environment and society, and to continuously develop our businesses such that they assume leadership positions in their respective industries and segments to achieve long-term success for our company. We invest in a diversified portfolio of strong businesses that create value. Our efforts are sustained by our employees and by our core competencies of innovation, customer focus, quality, process excellence and portfolio management.

Strategies of the Segments

Pharmaceuticals

Demographic change is impacting health care systems through the growing number of chronic diseases and the increasing occurrence of multiple conditions.

See also A 1.3

We are seeking to contribute to medical progress through our focus on researching, developing and marketing innovative medicines that provide significant clinical benefit and value primarily in the therapeutic areas of cardiology, oncology, women's health, hematology and ophthalmology.

Our medium-term growth is being primarily driven by our successfully launched products Xarelto™, Eylea™, Stivarga™, Xofigo™ and Adempas™. To safeguard long-term growth, we are continuing to invest in research and development (R&D). Here our efforts are focused on the areas in which we see a substantial need for innovation and can make a major impact through the expertise amassed by our researchers. This is true especially for cardiovascular diseases, cancer and certain uses in women's health. To supplement our R&D activities, we will continue to expand our portfolio through acquisitions, licensing agreements and external collaborations while maintaining a targeted approach.

To improve access to our products in developing and emerging countries (Access to Medicine – ATM), we are implementing economically feasible concepts and further developing our compounds for the treatment of neglected tropical diseases alongside our philanthropic activities.

ATM: see Glossary

Online Annex: A 1.2.1-1

As an innovative company, we improve people's quality of life by developing products and solutions for preventing and treating disease. We also work on programs and initiatives with various partners so that people worldwide, regardless of their origin and income, have access to our products (Access to Medicine, ATM).

For more than ten years, we have donated to the World Health Organization (WHO) two of our active ingredients and financial resources for the treatment of African sleeping sickness and Chagas disease, which is widespread in Latin America. As a 2012 cosignatory to the London Declaration on Neglected Tropical Diseases, we committed to providing these medications to the WHO until these diseases are either contained or eradicated.

Moreover, we are developing a new formulation of the drug Nifurtimox (for Chagas disease) that is suitable for children and are researching whether weight-based dosing could reduce treatment time. In a product development partnership with DNDi (Drugs for Neglected Diseases Initiative), we are examining whether the ingredient emodepside deployed by Bayer Animal Health could also be used to develop an innovative treatment for river blindness. As a member of the TB Drug Accelerator program, we are providing access to parts of our substance library in support of the search for new compounds to combat tuberculosis.

We are additionally developing economically feasible family planning programs. For instance, we provide women in developing countries with better access to hormonal birth control. These programs make our products available to international development partners at preferential prices. To this end, we reduced the price of Jadelle™, a reversible, long-term contraceptive implant, by half. Before the program was originally scheduled to end, Bayer announced that it would be extended to 2023. Bayer's family planning activities directly support "Good Health and Well-Being," the third of the U.N. Sustainable Development Goals, since these activities address maternal and infant mortality as well as reproductive health.

In some countries where sections of the population have no access to innovative medicines via health care systems, we establish patient assistance programs for selected products. These aim particularly to provide access to oncology and cardiovascular products and products to treat chronic diseases such as multiple sclerosis and hemophilia. Such programs exist in the United States, China, South Africa, a number of countries in Southeast Asia, and other regions.

Consumer Health

Increasing cost pressure on public health care systems and greater personal responsibility by consumers are increasingly putting the spotlight on the benefits of self-care. In addition, advancing digitization in the health care market necessitates a stronger focus on digital products and services.

We are tackling these changes by investing in innovation to reinforce our core brands Claritin™, Aspirin™, Aleve™, Bepanthen™, Canesten™, Alka-Seltzer™, Dr. Scholl's™, One A Day™, Coppertone™, Elevit™ and Berocca™. We are also expanding our digital range, as well as our e-commerce activities.

Furthermore, we are focusing on increasing our presence in key markets such as the United States, Germany, Brazil, Russia and China, as well as additional countries. We are also promoting the transfer of prescription medicines and active ingredients to nonprescription status (Rx-to-OTC switch), enabling them to be used in self-care. In so doing, we want to guarantee consumers better access to medicines and give them the opportunity to take more responsibility for their health, thereby improving their quality of life.

Crop Science

The need for food, animal feed and renewable raw materials is growing worldwide. At the same time, however, the available arable land is limited and is increasingly endangered by the impact of climate change. In addition, there is growing demand for sustainable farming practices. This requires innovative solutions that can be leveraged to boost agricultural productivity and guarantee food security.

See also A 1.3

www.bayer.com/foodchain

As part of our strategy to develop holistic solutions, we aim to build on our expertise in the integration of seed technology with chemical and biological crop protection. We are also driving digitization. In the field of digital farming, we plan to develop a proprietary range of services with specific data models that simulate risk factors for crop disease outbreaks, among other things. Our goal is to provide farmers with tailored recommendations on the targeted and correct use of our products, thus helping them to improve their yields.

In line with our commitment to sustainable agriculture, we promote cost-effective and socially viable farming practices that use resources efficiently and protect the environment. By providing tailored solutions, we aim to help smallholder farmers in developing and emerging countries to optimize agricultural production and improve their living standards. Moreover, as part of our Bayer ForwardFarming initiative, we develop and promote innovative solutions for sustainable agricultural practices in collaboration with farmers. As part of these efforts, we are continuously expanding our network of ForwardFarms.

As previously communicated, we are seeking to acquire the Monsanto Company. Together we see ourselves being in a position to offer a broader portfolio of innovative products customized to better meet farmers' many challenges and individual needs. In the medium to long term, the combined enterprise would be able to bring innovative solutions to the market faster and provide its customers with better solutions and an optimized product offering on the basis of agricultural analysis and supporting digital farming applications.

See A 1.1.2. for the status of the Monsanto acquisition

Animal Health

The development of the animal health market is primarily driven by a growing global population and higher average incomes. In the companion animals segment, this leads to rising pet ownership levels. In the farm animals segment, moreover, a growing aspiration to adopt Western lifestyle habits is leading to higher meat consumption. Effective and safe animal medicines are therefore increasingly in demand in both areas.

In the companion animals business, Animal Health holds a leading position in the global parasiticide segment. We are focusing on maintaining the strong performance of the innovative Seresto™ collar, opening up new distribution channels and leveraging the brand equity of the Advantage™ product family.

In the farm animals business, we are focusing on antiparasitics and anti-infectives for the treatment of infectious diseases. In addition to the products developed in-house, we also explore opportunities to strengthen our business through acquisitions. For example, we expanded our antiparasitics business in the United States through the successful integration of the Cydectin™ portfolio in January 2017.

Targets and key performance indicators

Our strategy is aimed at achieving economic growth balanced with our responsibility for the environment and society. To advance the consistent implementation of our strategy, we have set ambitious Group targets along the value chain. These targets are in the areas of growth and profitability, innovation, sustainability and employees.

The current status of our progress in these areas is documented in the following table and the respective chapters.

A 1.2.1/1

Bayer Group Targets

Target	Target attainment (as of 2017)	New or adjusted target
Growth and Profitability		
Group sales (Fx & portfolio adj. change); revised forecast in October 2017: low-single-digit-percentage increase to €35 billion to €36 billion	1.5 % increase to €35.0 billion	Increase by a low- to mid-single-digit percentage to around €35 billion
EBITDA before special items; revised forecast in October 2017: slightly above the level of the previous year	At the prior-year level (–0.3%)	At the prior-year level
Core earnings per share; revised forecast in October 2017: low-single-digit percentage decrease	1.0% increase	At the prior-year level
Innovation		
Group: Increase in R&D investment to €4.8 billion (2017)	€4.5 billion	R&D investment of around €4.1 billion (2018)
Pharmaceuticals: transition of 10 new molecular entities (NMEs) into development (2017)	10 new molecular entities (NMEs) transferred	Transition of nine new molecular entities (NMEs) and one new indication or one new formulation project into development (2018)
Consumer Health: transition of 25 consumer-validated concepts into early development (2017)	47 new concepts transferred	Transition of 25 consumer-validated concepts into early development (2018)
Crop Science: transfer of three new molecular entities (NMEs), plant traits or biologics into confirmatory technical proof-of-concept field studies (2017)	Start of field studies on two new molecular entities (NMEs)	Transfer of three to four new molecular entities (NMEs), plant traits or biologics into confirmatory technical proof-of-concept field studies
Sustainability		
Supplier management		
Evaluation of all strategically important suppliers (2017)	99.5% Target achieved	Bayer will conduct a new stakeholder survey and materiality analysis in 2018. This will be used to define new Group targets.
Evaluation of all potentially high-risk suppliers with significant Bayer spend (2020)	93%	Target unchanged
Development and establishment of a new sustainability standard for our supply base (2020)	In implementation	Target unchanged

See A 1.3 for further information

See A 1.4.2.1 for further information

A 1.2.1/1 continued

Bayer Group Targets

Target	Target attainment (as of 2017)	New or adjusted target
Resource efficiency		
Improvement of 10% in energy efficiency (2020); reference value 2015: 143 kWh/€1,000 external sales	125 kWh/€1,000 external sales (12.6% improvement)	Target unchanged
Reduction of 20% in specific greenhouse gas emissions (2020); new reference value 2015: 55.7 kg CO_2e/€1,000 external sales	46.3 kg CO_2e/€1,000 external sales (–16.9%)	Target unchanged
Establishment of water management at all sites in water-scarce areas (2017)	100% Target achieved	Bayer will conduct a new stakeholder survey and materiality analysis in 2018. This will be used to define new Group targets.
See A 1.4.3.3 for further information		
Safety		
Reduction of 35% in occupational safety incident rate (Recordable Incident Rate – RIR) (2020); reference value 2012: 0.50	RIR 0.45 (–10%)	Target unchanged
Reduction of 30% in process and plant safety incidents (Loss of Primary Containment Incident Rate – LoPC-IR) (2020); reference value 2012: 0.21	LoPC-IR 0.13 (–38%)	Target unchanged
See A 1.4.3.2 for further information		
Product stewardship		
Conclusion of assessment of hazard potential of all substances (>99%) used in quantities exceeding one metric ton per annum (2020)	76%	Target unchanged
See A 1.4.3.1 for further information		
Compliance		
Annual compliance training for virtually 100% of Bayer managers	97%	Target unchanged
See A 4.2 for further information		
Employees		
Continuous improvement in employee engagement; reference value 2012: 85%	79%[1]	Continuous improvement in employee satisfaction; new reference value 2017: 79%
Increase in the proportion of women in senior management to 35%; (2020); reference value 2010: 21%	32%	Target unchanged
Increase in the proportion of senior managers from outside the European Union, the United States or Canada to 25% (2020); reference value in 2013: 18%	21%	Target unchanged
See A 1.4.1.1 for further information		

[1] The figures are not comparable due to a change in the methodology used in the employee survey.

1.2.2 Management Systems

One of the prime objectives of the Bayer Group is to achieve profitable growth in order to steadily increase the enterprise value and sustain the company as a going concern. Economic planning and management for the company takes place within a framework for the segments determined by the Board of Management in the course of the strategic management process and translated into specific targets during operational planning. Continuous monitoring of business developments complements the planning and management process, and key management and performance indicators are regularly updated. This process also involves implementing strategic objectives and adopting countermeasures in the event of deviations from the budget. Moreover, the Board of Management uses targets and performance indicators to steer the company's sustainable alignment.

We use the following indicators to plan, manage and monitor the development of our business:

Operational management indicators

See also A 2.4

The main parameters in economic management within the Bayer Group at the operational level are figures for sales, earnings and tied-up capital, which therefore also significantly affect short-term variable compensation.

Growth is measured primarily 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 segments. A key measure of profitability at the Group and segment levels is EBITDA before special items. The EBITDA margin before special items, which is the ratio of EBITDA before special items to sales, serves as a relative indicator for the internal and external comparison of operational earning power. 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.

Strategic value-based indicator: return on capital employed (ROCE)

See also A 2.2.3 and A 2.4

Return on capital employed (ROCE), which measures the company's economic success in relation to the capital employed, supplements the operational management indicators. As a strategic indicator, ROCE measures the periodic capital return. This can then be compared with the weighted average cost of capital. If ROCE is greater than the cost of capital, this indicates that a contribution is being made to increasing the enterprise value, as the expectations of the capital market have been exceeded. Monitoring ROCE over time supports the analysis of long-term business development, while comparing ROCE between business areas is a process that aids portfolio analysis.

1.2.3 Sustainability Management

U.N. Global Compact: see Glossary
GRI: see Glossary

To us, sustainability means safeguarding our future social and economic viability. Understood in this context and as a part of our corporate strategy, sustainability is integrated into our day-to-day procedures. We underline our mission as a company that acts sustainably through our commitment to the U.N. Global Compact (UNGC) and the Responsible Care™ initiative, as well as through our involvement in the World Business Council for Sustainable Development (WBCSD). In our sustainability reporting we have followed the guidelines of the Global Reporting Initiative (GRI) for many years.

www.bayer.com/unsdg
See also A 1.2.1

Bayer is committed to the U.N. Sustainable Development Goals (SDGs) and has published a company position detailing this. Our innovations, products and services contribute to overcoming some of the biggest global challenges, including the goals of "Zero Hunger" (SDG 2) and "Good Health and Well-Being" (SDG 3) in particular.

Clear responsibilities and structures defined

As part of Bayer's corporate strategy, sustainability is firmly established at Board level. Responsibility for the Group's sustainable orientation lies with the Board of Management member responsible for Human Resources, Technology and Sustainability in his role as Chief Sustainability Officer, and with the Sustainable Development Committee (SDC) under the auspices of the Health, Safety & Sustainability function. The SDC sets targets and draws up initiatives, management systems and corporate policies, and is responsible for their implementation. Operational implementation is effected with the help of nonfinancial targets and performance indicators throughout the value chain, based on a clear definition of responsibilities in the corporate structure and the identification of major areas of activity using a materiality analysis. Corporate policies ensure our sustainability principles are firmly established in business operations and are implemented through corresponding management systems, committees and processes. The review and revision of these regulations and internal audits ensure that our management systems are continuously improved and aligned to the respective requirements.

GRI G4-18

www.bayer.com/policies

A 1.2.3/1

Structure of Sustainability Management

Sustainability management		
Organization	**Major areas of activity**	**Steering, measurement and documentation**
› Member of the Board of Management responsible for Human Resources, Technology and Sustainability › Corporate Health, Safety & Sustainability function › Sustainable Development Committee	› Product and process innovation › Access to medicine › Sustainable food supply › Employee relations & development › Business ethics › Product stewardship › Safety › Environmental protection / resource efficiency › Supplier management › Stakeholder engagement / partnering › Societal engagement	› Corporate policies on, for example, – human rights – compliance – sustainable development – responsible marketing › Targets / indicators › HSEQ management systems and audits › Opportunity and risk management › Integrated Annual Report with independent auditing
Legal requirements such as the CSR Implementation Directive and initiatives such as WBCSD, GRI, UNGC and Responsible Care		

Materiality analysis and areas of activity

We regularly analyze the expectations and requirements of our major stakeholders and compare these with our own assessment of their relevance for Bayer. This enables us to identify at an early stage the latest developments along with sustainability-related opportunities and risks, which we can then incorporate into our strategy. We document the identified topics in a materiality matrix that we use to derive the main areas of activity for Bayer. In view of the separation of Covestro and the planned acquisition of Monsanto, we will reexamine our areas of activity in 2018 using a comprehensive materiality analysis.

An online graphic shows our current areas of activity and their assignment to the stages of the value chain.

GRI G4-18, G4-23, G4-26, G4-27

www.bayer.com/materiality

Online Annex: A 1.2.3-1

A 1.2.3-1/1

Areas of Activity Across the Different Stages of the Value Chain

Areas of activity / Value chain stages	Research, development, innovation	Procurement and supply chain	Production	Logistics	Distribution and marketing	Use
Product and process innovation	⊗		⊗			
Access to medicines	⊗				⊗	
Sustainable food supply	⊗		⊗		⊗	
Employee relations & development	⊗		⊗	⊗	⊗	
Business ethics	⊗		⊗	⊗	⊗	⊗
Product stewardship	⊗		⊗	⊗	⊗	⊗
Safety			⊗	⊗		
Environmental protection / resource efficiency	⊗		⊗	⊗	⊗	⊗
Supplier management		⊗				
Stakeholder engagement / partnering	⊗		⊗	⊗	⊗	⊗
Societal engagement	⊗				⊗	

www.bayer.com/areas-of-activity

www.bayer.com/gri

On our sustainability website we include a table giving an overview of our areas of activity with definitions and the corresponding Group targets and GRI aspects. A detailed GRI content index with the corresponding UNGC principles can be found under “C Further Information.”

GRI G4-25, G4-26

Stakeholder dialogue promotes acceptance and business success

As a company, Bayer is a part of society and of public life. Through open dialogue with our stakeholders we aim to build trust in our actions, our products and the social value of our services, because the expectations and viewpoints of our stakeholders affect public acceptance of Bayer and thus our commercial success. Stakeholder dialogue helps us to recognize important trends and developments in society and our markets at an early stage and take this information into account when designing our business. The integration of various stakeholder groups is planned within the scope of our stakeholder engagement process. This process also includes monitoring the results of individual dialogue measures. In strategic decision-making processes such as investment projects and launches of new products, Bayer approaches key social and political players right from the start of a new project to canvass their support. The open dialogue makes it possible to identify opportunities and risks early on. This process is in line with our Stakeholder Engagement Directive and is supplemented by an internal information platform.

GRI G4-24

We fundamentally distinguish four stakeholder groups with which we engage in various dialogue formats.

A 1.2.3/2

Our Most Important Stakeholder Groups

GRI G4-24

Bayer			
Partners	**Financial market participants**	**Social interest groups**	**Regulators**
› Customers › Suppliers › Employees › Associations › Universities / schools	› Investors › Banks › Rating agencies	› General public › NGOs › Local communities › Competitors	› Lawmakers › Politicians › Authorities

Online Annex: A 1.2.3-2

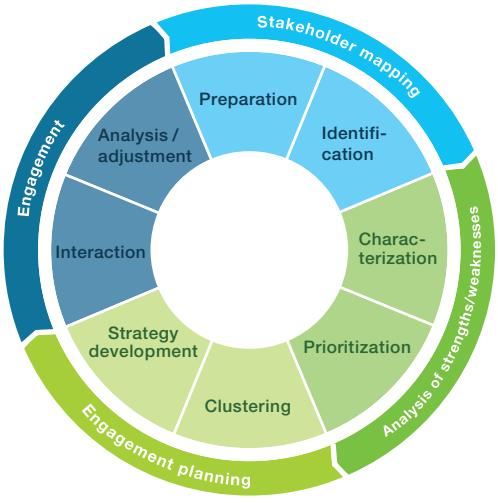
Diverse stakeholders in focus

Our stakeholder engagement process describes how the expectations of our stakeholders can be taken into account in a specific project, for example, and dialogue with them steered. The engagement process is regularly reviewed based on social trends.

GRI G4-25, G4-26

A 1.2.3-2/1

Stakeholder Engagement Process



Collaboration formats aimed at specific target groups

Our regular stakeholder activities range from dialogue at local, national and international level and active involvement in committees and specialist workshops all the way through to comprehensive information programs, issue-related multi-stakeholder events and participation in international initiatives and collaborations.

GRI G4-26

Below and in the relevant chapters, we use examples to provide an insight into our engagement in 2017 with respect to our four most important stakeholder groups.

GRI G4-26

Our partners

Customers and suppliers

More on this topic can be found in A 1.4.2.1 and A 1.4.2.3.

Employees

More information about internal communications can be found in A 1.4.1.1.

Universities and schools

Bayer's research and development activities are enhanced supported by the international exchange with leading universities, public-sector research institutes and partner companies. More about this can be found in A 1.3.

You can find more information on our comprehensive activities in dialogue with school and university students in Online Annex A 1.4.1.3-1 of this Annual Report.

Associations

Bayer is an active member of, or holds leadership positions in, numerous associations and their committees. Examples include the Federation of German Industries (BDI; Presidential Board), the German Chemical Industry Association (VCI; Vice-Presidency), the German Equities Institute (DAI; Executive Committee and Board) and the European Chemical Industry Council (CEFIC; Executive Director Change Management). Bayer also currently provides the Chairman of the Executive Board of econsense, the Forum for Sustainable Development of German Business.

Our segments are active members of their respective industry associations and committees. For example, Pharmaceuticals is on the boards of both the European (EFPIA) and the U.S. (PhRMA) pharmaceutical industry associations. Consumer Health has leadership functions in relevant industrial and trade associations. The member of the Bayer Board of Management responsible for Consumer Health is on the Board of Directors of the WSMI (World Self-Medication Industry). Representatives of the segment are also on the boards of regional self-medication associations.

Crop Science is represented, for example, on the board of the international crop protection association CropLife International, the European Crop Protection Association (ECPA) and the presidium of the German agricultural industry association Industrieverband Agrar. Crop Science is represented on the Board of Administration and the Scientific Committee of the European Centre for Ecotoxicology and Toxicology of Chemicals (ECETOC).

Crop Science is also a supporter of the International Food Information Council (IFIC) and a member of the Biotech Innovation Organization (BIO), the world's largest biotech trade association. Furthermore, Crop Science holds memberships in the North American Council for Biotechnology Information (CBI), the European Seed Association (ESA), the biotech lobbying organization EuropaBio and the International Seed Federation (ISF), which represents the interests of the seed industry on a global level.

Animal Health is represented on numerous boards of directors of national and international associations for animal health such as Health for Animals.

Financial market players

Investors, banks and rating agencies

More information on our dialogue with the capital market – stockholders, capital investment companies, institutional investors, banks and rating agencies – can be found in the "Investor Information" chapter of this Annual Report.

Regulators

Legislators, authorities and politicians

The framework for the company's operations is essentially determined by authorities, legislators and politicians. The worldwide dialogue includes discussions with political decision-makers and active involvement in specialist committees and cooperation projects. Our active participation in political decision-making processes is explicitly sought by the key players involved. See the chapter on compliance for more on our rules for political engagement.

GRI G4-26

Lobbying

The Group's Public and Governmental Affairs Committee develops the principles for the alignment of Bayer's political lobbying. This body establishes the company's position with regard to relevant political and legislative decision-making processes, as well as advising the Board of Management on its position on important political issues. In 2017, Bayer's global lobbying work focused on the issues of "innovation," "access," "reputation" and "freedom to operate." In the area of "innovation," Bayer advocates social discourse about good framework conditions for the development of innovative technologies, as well as strong protection of intellectual property. The issue of "access" deals with safe, fast and simple access by patients and consumers to our products. In the area of "reputation" we want to position Bayer as a leading life science company. In this context, we actively seek dialogue with various societal players, particularly nongovernmental organizations and politicians. The term "freedom to operate" summarizes all activities with which Bayer advocates strictly science-based regulation and an intensive and results-oriented debate about new technologies. The Communications & Public Affairs Function, in cooperation with the country companies, is responsible for the specific local implementation of lobbying work, compliance with ethical and legal criteria and the creation of transparency.

www.bayer.com/pol-involvement

GRI G4-27

Social interest groups

Nongovernmental organizations (NGOs), the public, the local community and competitors

Bayer is involved in a variety of projects, stakeholder dialogues, thematic initiatives and specialist conferences at a national and international level in order to play an active role in the common task of shaping sustainable development. This includes discourse and cooperation with a broad range of NGOs and supranational organizations on various topics, as well as in particular dialogue with the public.

GRI G4-26

NGOs play a role in forming the opinions of the public. For this reason, we have internally systemized collaboration with this stakeholder group. To this end, we look to understand the interests of these groups, take their perspectives on board and enter into dialogue with the relevant experts. Exchange with the different NGOs is communicated to the Board of Management and its content is thereby incorporated into our considerations.

Bayer is also actively engaged in the U.N. Global Compact and its initiatives, the CEO Water Mandate and Caring for Climate, as well as the Global Compact LEAD network and local networks. We have also acted as a Gold Community member of the Global Reporting Initiative since 2004.

All Bayer segments maintain open dialogue with the societal stakeholders of relevance to them and develop individual dialogue formats for this purpose.

Dialogue with the local community builds trust

An important part of our stakeholder dialogue takes place in the direct vicinity of our sites. We are working on being recognized everywhere as a reliable partner and attractive employer that is aware of its social responsibility. In the case of investment projects for example, the involvement of the local community plays a decisive role in ensuring their success.

GRI G4-26

GRI G4-26

In the communities near our production sites in particular, we maintain open dialogue between community members and local management, which is supported by the respective country organization. This dialogue includes personal discussions with citizens' initiatives, representatives of church communities and the regional press. This community dialogue is anchored in a globally valid corporate policy on site management.

1.3 Focus on Innovation

Bayer and Ginkgo Bioworks form a new company to develop beneficial microbes for plants

LifeHub in Boston, United States, reinforces our open innovation network

Pharmaceuticals successful with further approvals; cooperation with Loxo Oncology contributes to further expansion of oncology area

Crop Science cooperation network with many strategic partners expanded

Innovation is one of our core competencies and therefore a cornerstone of our Group strategy. We define innovations as new solutions that generate added value for our customers and society. Our activities focus on innovative products based on our strong research and development (R&D) competencies supplemented with targeted process, service and business model innovations.

↗ Group target 2017: increase in R&D investments to €4.8 billion; see also A 1.2.1

Our innovations help us contribute to solving global challenges in medical care and food security. In addition to the strong innovative capabilities of our employees throughout the company, our efforts concentrate on excellence in research and development, the use of new, groundbreaking technologies and a broad open innovation network.

To further develop the innovation expertise of the entire organization, we set ourselves the goal in 2017 of training our employees in new methods, creating a central platform for innovation topics and establishing an agile organizational structure to support employees in developing new ideas and innovation projects. We have successfully implemented this and given around 950 employees an introduction to new methods such as Design Thinking and Systematic Inventive Thinking. In addition, we have established an innovation platform where employees can find information about new trends and current projects and interconnect and exchange with each other on innovation topics globally. An agile, global, cross-divisional network with innovation coaches supports our employees in developing new ideas and pursuing projects. Our activities were honored with the Learning 100! Excellence Award 2017 for innovation, where we achieved 16th place among the top 100 companies worldwide and were the best life science company.

Excellence in research and development

Bayer's success has always been based on excellence in research and development. Our researchers develop new molecules and technologies in research-intensive fields to improve human, animal and plant health. The R&D activities we pursue are aligned with the innovation strategies of our segments. At Pharmaceuticals, Crop Science and Animal Health, these activities focus on the research and development of safe and sustainable active ingredients to meet the need for new pharmaceutical and crop protection products as well as of new seed products. Meanwhile, Consumer Health concentrates first on the development of new, nonprescription products and solutions, such as improved product formulations, packaging, technical applications and medical devices. Second, the transition of prescription drugs to OTC status is a key tool for meeting the growing desire of customers for self-care products.

Bayer maintains a global network of R&D locations, which employ more than 14,000 researchers. In 2017, we increased our research and development investment by 3.1% (Fx adj.) to €4,504 million. We plan to invest around €4.1 billion in R&D in 2018.

Bayer AG key data: see also A 1.4.4

A 1.3/1

Information on Research and Development in 2017

	R&D expenses € million		R&D expenses before special items € million		Share of R&D expenses %		R&D expenses before special items % of sales		R&D employees FTE	
	2016	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Pharmaceuticals	2,787	2,888	2,736	2,724	63.3	64.1	16.7	16.2	7,934	8,138
Consumer Health	259	240	234	228	5.9	5.3	3.9	3.9	331	368
Crop Science	1,164	1,166	1,156	1,120	26.4	25.9	11.7	11.7	5,631	5,174
Animal Health	140	155	140	145	3.2	3.4	9.2	9.2	308	333
Reconciliation	55	55	55	55	1.2	1.2	5.2	4.7	9	28
Total	**4,405**	**4,504**	**4,321**	**4,272**	**100**	**100**	**12.4**	**12.2**	**14,213**	**14,041**

2016 figures restated

Global open innovation network

Partnerships are integral to our innovation strategy. We enter into strategic alliances with various partners such as universities, governmental agencies, start-ups, suppliers and industry. This gives us access to complementary technologies and expertise that expand our framework conditions for innovation.

Our open innovation network spans all parts of the company along the entire value chain. Our open innovation portal offers a platform for interdisciplinary collaborations between different organizational units. We also invest in venture capital funds that finance life science start-up companies, among other projects. Our newly established, cross-segment LifeHub in Boston, Massachusetts, United States, reinforces our opportunities to work with leading partners to develop new health care and nutrition solutions.

https://innovate.bayer.com/

https://innovate.bayer.com/what-we-offer/lifescience-ihub/

Online Annex: A 1.3-1

In addition to our cross-segment LifeHub in Boston, Massachusetts, United States, the segments maintain their own innovation hubs in leading innovation centers throughout the world where global research partnerships are coordinated.

In the United States and Germany, we operate an incubator model for young life science companies under the CoLaborator™ name. The objective of the global CoLaborator™ concept is to offer these companies suitable laboratory and office infrastructure in the direct vicinity of Bayer's own research facilities and the opportunity to exchange experiences with our experts.

In 2017, we continued the Grants4Indications™, Grants4Apps™, Grants4Targets™ and PartnerYourAntibodies™ crowdsourcing programs at Pharmaceuticals, as well as Grants4Targets™ and Grants4Traits™ at Crop Science. Moreover, we launched a new Grants4Tech™ program with which we are seeking new technical production solutions.

Also in 2017, SRI-BAYER Discovery and Innovation Grants was launched in conjunction with the Society for Reproductive Investigation (SRI). The objective of these grants is to develop new treatment options for women's health issues where there is a high medical need. Running for the duration of 2017, Bayer and the American Heart Association launched the AHA-Bayer Discovery Target Grants Program to advance scientific understanding and address unmet medical needs in cardiovascular disease.

By investing in venture capital funds, we support up-and-coming companies in pharmaceutical and agricultural technologies. We have already set up various venture capital funds with partners such as Versant Ventures, HTGF, Flagship Ventures, Trendlines and Finistere Ventures, LLC. The Bayer Trendlines AG Innovation Fund has established IBI-AG, a company involved in the crop protection arena. The company's goal is to discover and develop a novel, environmentally friendly pest management platform.

GRI G4-26

Scientists from Bayer are engaged in constant dialogue with renowned research institutes and support partnership projects in the public and private sectors. In 2017, public funding worth more than €47.5 million was spent worldwide on Bayer R&D projects. This is equivalent to roughly 1.1% of our annual R&D expenses.

Use of groundbreaking technologies

Another key tool for achieving our strategic goals is the use of new, groundbreaking technologies. We pursue such technologies through the activities of Leaps by Bayer (formerly Lifescience Center) and our Life Science Collaboration program.

Leaps by Bayer has the strategic goal of establishing access to state-of-the-art technologies through a new innovation and collaboration model. After making investments in defined research applications for the CRISPR-Cas9 technology (Casebia) and in the development of highly efficient induced pluripotent stem cell therapies (BlueRock Therapeutics) in the past two years, we entered into our first agreement in the agricultural sector in September 2017. In conjunction with U.S.-based Ginkgo Bioworks, Inc., Bayer founded a new company focused on the plant microbiome. The primary focus of this research is the mechanism of nitrogen fixation for minimizing agriculture's environmental impact. This entry into microbiome research is part of Bayer's innovation strategy. The company will be located in Boston, Massachusetts, and Sacramento, California, in the United States.

In addition, with the help of our Life Science Collaboration Program, we are conducting cross-divisional evaluations of groundbreaking biological and technological innovations in the fields of optogenetics and artificial intelligence, for example.

Patents protect Bayer's intellectual property

Globally reliable protection of intellectual property rights is particularly relevant for an innovation company like Bayer. Depending on the legal framework, we therefore endeavor to obtain patent protection for our products and technologies in major markets. When we successfully market patent-protected products, this enables us to reinvest the profits in sustainable research and development. Several years can pass between the time we submit a product approval application and market launch of a product, so only a few years are left for generating a return on the investment in this intellectual property. At the end of 2017, we owned approximately 48,100 valid patent applications and patents worldwide relating to more than 4,700 protected inventions. The following table shows the expiration dates for the Bayer Group's significant patents.

A 1.3/2

Pharmaceuticals Patent Expiration Dates

											Market
	Germany	France	Italy	Switzer-land	Spain	U.K.	China	Japan	Brazil	Canada	U.S.A.
Products											
Adempas™											
Active ingredient	2028	2028	2028	2028	2028	2023[a]	2023	2027-2028[d]	2023[b]	2023	2023[a]
Production process / intermediate	2030	2030	2030	2030	2030	2030	2030	2030	2030[b]	2030	2030
Eylea™											
Active ingredient	2025	2025	2025	2025	2025	2020[a]	2020	2021-2023[d]	2020[b]	2020	–
Formulation	2027	2027	2027	2027	2027	2027	2027[b]	2028-2029[d]	2027[b]	2027	–
Kogenate™											
Active ingredient	–	–	–	–	–	–	–	–	–	2021	–
Formulation	2017	2017	2017	2017	2017	2017	2017	2020	2020	2017	–
Kovaltry™											
Active ingredient	–	–	–	–	–	–	–	–	–	2021	–
Formulation	2017	2017	2017	2017	2017	2017	2017	2023[e]	2020	2017	–
Production process	2018	2018	2018	2018	2018	2018	2018	2023[e]	2023	2018	2018[a]
Production process (cell line / chaperone)	2029[e]	2024[a]	2029[e]	–	2024[a]	2024[a]	–	2028[e]	–	2024	2024
Mirena™											
Inserter	2029	2029	2029	2029	2029	2029	2029	2029	2029[b]	2029	2031[c]
Nexavar™											
Active ingredient	2021	2021	2021	2021	2021	2021	2020	2021-2025[d]	2025	2020	2020
Salt form	2022	2022	2022	2022	2022	2022	–	–	–	–	–
Polymorph	2025	2025	2025	2025	2025	2025	2025	2025-2026[d]	2025[b]	2025	2027
Formulation	2026	2026	2026	2026	2026	2026	2026	2026-2027[d]	2026[b]	2026	2028[c]
Stivarga™											
Active ingredient	2028	2028	2028	2028	2028	2024[a]	2024	2026[d]	2024[b]	2024	2031
Formulation	2025	2025	2025	2025	2025	2025	2025	2026[d]	2025[b]	2025	2031
Production process	2031	2031	2031	2031	2031	2031	2031	2031	2031[b]	2031	2031
Xarelto™											
Active ingredient	2023	2023	2023	2023	2023	2023	2020	2022-2025[d]	2022	2020	2024
Formulation	2024	2024	2024	2024	2024	2024	2024	2025-2028[d]	2024[b]	2024	2024
Xofigo™											
Use	2024	2024	2024	2024	2024	2024	2019	2019[a]	–	2019	2022[e]
Production process	2031	2031	2031	2031	2031	2031	2031	2031	2031[b]	2031[b]	2031

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

Online Annex: A 1.3-2

See also www.bayer.com/political-position-ip

Patent protection is essential

Patent terms vary according to the laws of the country granting the patent. In view of the high investment required for product research and development, the European Union (E.U.) 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 patent protection period due to regulatory approval processes for new drugs.

The term of a patent is normally 20 years. Since it takes an average of 12 years to develop a new medicine, only eight years of patent protection generally remain following the product's approval. In most cases it would be impossible to cover the high costs incurred in the research and development of innovative medicines or of new indications or dosage forms for existing drugs without this protection. We are therefore committed worldwide to protecting both the international patent system and our own intellectual property.

Pharmaceuticals

Group target 2017: transition of 10 new molecular entities (NMEs) into development; see also A 1.2.1

Bayer worldwide; see also A 1.1.1/1

Pharmaceuticals focuses on indications with high medical need in the areas of cardiovascular disease, oncology, women's health care, hematology and ophthalmology. We conduct research and development activities at several locations, mainly in Germany, the United States, Japan, China, Finland and Norway.

In 2017, we achieved our target for the year and were able to transfer ten new molecular entities from our research pipeline into preclinical development. We define a new molecular entity (NME) as a new chemical or biological substance that has not been in development to date. In preclinical trials these substances are examined further in various models with respect to their suitability for clinical trials and the associated "first-in-man" studies. In 2017, we conducted clinical trials with several drug candidates from our research and development pipeline. We strengthened products that were already on the market through additional development activities to further improve their application and/or expand their spectrum of indications.

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 clinical trials at Bayer satisfy strict international guidelines and quality standards, as well as the respective applicable national laws and standards.

Pharmaceuticals publishes information on its own clinical trials both in the publicly accessible register www.ClinicalTrials.gov and in its own "Trial Finder" database.

Online Annex: A 1.3-3

Transparency through publication of clinical trials

Bayer publishes information about clinical trials in line with the respective applicable national laws and according to the principles of the European (EFPIA) and U.S. (PhRMA) pharmaceutical industry associations, these principles being defined in a joint position paper.

In the case of approved products, summarized results of Phase II, III and IV clinical trials are accessible online through the "Trial Finder." Upon request, scientists can receive access to anonymized data at the patient level via the portal www.clinicalstudydatarequest.com.

Further information on our globally uniform standards, the monitoring of studies and the role of the ethics committees can be found on the internet.

www.bayer.com/ethics-in-rnd

Progress in Phase II clinical projects

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

A 1.3/3

Research and Development Projects (Phase II)[1]

Projects	Indication
Anetumab ravtansine (mesothelin ADC)	Malignant pleural mesothelioma
BAY 1128688 (AKR1C3 inhibitor)	Endometriosis
BAY 1142524 (chymase inhibitor)	Heart failure
BAY 1193397 (AR alpha 2c rec ant.)	Peripheral artery disease (PAD)
BAY 1213790 (anti-FXIa antibody)	Prevention of thrombosis
BAY 2306001 (IONIS-FXIRx)	Prevention of thrombosis[2]
Copanlisib (PI3K inhibitor)	Relapsed / refractory diffuse large B-cell lymphoma
Larotrectinib (LOXO-101, TRK inhibitor)	Solid tumors[3]
Neladenoson bialanate	Chronic heart failure
Nesvacumab (previously: Ang2 antibody) + aflibercept	Serious eye diseases[4]
Radium-223 dichloride	Breast cancer with bone metastases
Radium-223 dichloride	Multiple myeloma
Riociguat	Systemic sclerosis
Vilaprisan (S-PRM)	Endometriosis

[1] As of January 26, 2018
[2] Sponsored by Ionis Pharmaceuticals, Inc.
[3] Sponsored by Loxo Oncology, Inc.
[4] Sponsored by Regeneron Pharmaceuticals, Inc.
The nature of drug discovery and development is such that not all compounds can be expected to meet the predefined project goals. It is possible that any or all of the projects listed above may have to be discontinued due to scientific and / or commercial reasons and will not result in commercialized products. It is also possible that the requisite U.S. Food and Drug Administration (FDA), European Medicines Agency (EMA) or other regulatory approvals will not be granted for these compounds. Moreover, we regularly review our research and development pipeline so that we can give priority to advancing the most promising pharmaceuticals projects.

Below are the most significant changes that occurred in 2017 compared with the previous year:

Phase II studies with regorafenib, which are primarily sponsored by investigators, have been taken out of the overview of the most important Phase II projects. However, these studies are continuing.

In February 2017, our partner Regeneron Pharmaceuticals, Inc., United States, decided to halt development of rinucumab, a PDGFR antibody, in combination with aflibercept (tradename: **Eylea™**) for the treatment of wet age-related macular degeneration, based on the results of the CAPELLA Phase II clinical trial after 28 weeks. The trial missed its clinical endpoint, which had been for a statistically significant improvement in visual acuity after 12 or 28 weeks.

In the second quarter of 2017, based on the results of the GEMINI trial conducted by Janssen Research & Development, LLC, which had tested rivaroxaban (tradename: **Xarelto™**) in connection with a single antiplatelet therapy (SAPT) for the secondary prophylaxis of acute coronary syndrome (ACS), the decision was made to stop pursuing the development of rivaroxaban in this indication.

Bayer reported in July 2017 that a Phase II clinical trial evaluating Bayer's oncological development candidate anetumab ravtansine, also known as BAY 949343, as a monotherapy in previously treated patients with advanced malignant pleural mesothelioma (MPM) did not meet its primary endpoint of progression-free survival. The safety and tolerability of anetumab ravtansine corresponded with observations from previous trials. Anetumab ravtansine is currently being reviewed in other Phase I clinical trials as both a monotherapy and in combination with other drugs, including in a Phase Ib multi-indication study of six different types of advanced solid tumors and a Phase Ib combination study with patients with recurrent platinum-resistant ovarian cancer.

Bayer began a Phase II clinical trial in 2014 on the safety, tolerability and efficacy of riociguat in adult cystic fibrosis patients with the delta F508 gene mutation. The preliminary analysis of selected data from the first part of the trial indicated that there was no evidence of a positive trend in the efficacy of riociguat. A continuation of the trial was not considered meaningful at that time. In August 2017, Bayer decided to terminate the trial ahead of schedule. No concerns were raised about the safety of riociguat.

In November 2017, our partner Regeneron Pharmaceuticals, Inc., United States, published data from two Phase II studies in which the angiopoietin2 (Ang2) antibody nesvacumab had been tested in combination with aflibercept (tradename: **Eylea™**) against aflibercept monotherapy. One of these studies investigated patients with diabetic macular edema, while the other focused on patients with wet age-related macular degeneration. Regeneron reported that the differences in the improvement in visual acuity between the treatment groups did not justify Phase III development with the goal of obtaining marketing approval in the United States. At the same time, the efficacy of aflibercept monotherapy was confirmed for both indications. The results of the studies will be analyzed further and submitted for presentation at a future medical congress.

Progress in Phase III clinical projects

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

A 1.3/4

Research and Development Projects (Phase III)[1]

Projects	Indication
Copanlisib (PI3K inhibitor)	Various forms of non-Hodgkin lymphoma (NHL)
Darolutamide (previously: ODM-201, AR antagonist)	Castration-resistant nonmetastatic prostate cancer
Darolutamide (previously: ODM-201, AR antagonist)	Hormone-sensitive metastatic prostate cancer
Finerenone (MR antagonist)	Diabetic kidney disease
Molidustat (HIF-PH inhibitor)	Renal anemia
Radium-223 dichloride	Combination treatment of castration-resistant prostate cancer
Regorafenib	Colon cancer, adjuvant therapy
Rivaroxaban	Anticoagulation in patients with chronic heart failure[2]
Rivaroxaban	Prevention of venous thromboembolism in high-risk patients after discharge from hospital[2]
Rivaroxaban	Peripheral artery disease (PAD)
Rivaroxaban	VTE treatment in children
Tedizolid	Pneumonia
Vericiguat (sGC stimulator)	Chronic heart failure[3]
Vilaprisan (S-PRM)	Symptomatic uterine fibroids

[1] As of January 26, 2018
[2] Sponsored by Janssen Research & Development, LLC
[3] Sponsored by Merck & Co., Inc.

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

Below are the most significant changes that occurred in 2017 compared with the previous year:

In July 2017, Bayer began the ASTEROID Phase III clinical trial program to investigate the development candidate vilaprisan in women with symptomatic uterine fibroids. Vilaprisan is a novel orally dosed, selective progesterone receptor modulator developed by Bayer for enabling long-term treatment of uterine fibroids.

In October 2017, Bayer and its development partner Janssen Research & Development, LLC, announced that the Phase III NAVIGATE ESUS trial had been terminated ahead of schedule. The trial investigated the efficacy and safety of rivaroxaban (tradename: **Xarelto™**) for the secondary prevention of strokes and systemic embolisms in patients who had recently suffered an embolic stroke of unknown origin. Following a planned interim analysis conducted by the independent Data Monitoring Committee (DMC), the DMC recommended that the trial be terminated early since the efficacy of rivaroxaban compared with acetylsalicylic acid (ASA) was similar in the treatment groups and offered only limited potential for clinical benefit to patients if the trial continued.

In November 2017, the results of the global Phase III clinical study program INHALE, which investigated Amikacin Inhale in intubated and mechanically ventilated patients with Gram-negative pneumonia in addition to standard treatment, were announced. Amikacin did not demonstrate any clinical superiority versus the standard treatment in combination with an aerosolized placebo. Neither the primary endpoint nor the secondary endpoints were achieved. Amikacin Inhale is the development name for a drug-device combination comprising a specially formulated Amikacin inhalation solution and a patented synchronized inhalation system with a vibrating mesh nebulizer.

Bayer terminated its research into Amikacin Inhale and the associated cooperation with Nektar Therapeutics, Inc.

Following the recommendation of an independent data monitoring committee, Bayer in November 2017 unblinded ahead of schedule a Phase III trial of radium-223 dichloride in combination with abiraterone acetate and prednisone / prednisolone in patients with metastatic castration-resistant prostate cancer. The reason for this recommendation was the observance of an imbalance in terms of more fractures and deaths in the treatment arm investigating radium-223 in combination with abiraterone acetate and prednisone / prednisolone.

In December 2017, on the basis of positive Phase II data, Bayer launched a Phase III clinical study program in Japan that investigates the development candidate molidustat in patients with renal anemia. Molidustat is an inhibitor of the enzyme hypoxia-inducible factor-prolyl hydroxylase (HIF-PH) that stimulates the production of erythropoietin and the formation of red blood cells.

There is currently a study program investigating the efficacy and safety of rivaroxaban for the treatment and secondary prevention of venous thromboembolism in children. Timely and successful completion of this program would extend patent protection for **Xarelto™** in Europe and the United States by a further six months.

Filings and approvals

We regularly evaluate our research and development pipeline in order to prioritize the most promising pharmaceutical projects. Following the completion of the required studies with a number of these drug candidates, we submitted applications to one or more regulatory agencies for approvals or approval expansions. The most important drug candidates in the approval process are shown below.

A 1.3/5

Main Products Submitted for Approval [1]

Projects	Indication
Damoctocog alpha pegol (long-acting rFVIII)	Europe, U.S.A., Japan: hemophilia A
Rivaroxaban	Europe, U.S.A.: prevention of major adverse cardiac events (MACE), COMPASS study
Rivaroxaban [2]	U.S.A.: secondary prophylaxis of acute coronary syndrome (ACS), rivaroxaban in combination with dual antiplatelet therapy (DAPT); ATLAS trial

[1] As of January 26, 2018
[2] Submitted by Janssen Research & Development, LLC

In August 2017, Bayer received approval from the European Commission to modify the prescribing information for the oral Factor Xa inhibitor **Xarelto™** (active ingredient: rivaroxaban) based on data from the PIONEER Phase III study. The information contains a dosage recommendation for patients with nonvalvular atrial fibrillation who undergo percutaneous coronary intervention with stent placement and require oral anticoagulation.

Also in August 2017, the European Commission approved the oral multikinase inhibitor **Stivarga™** (active ingredient: regorafenib) for an additional indication. The approval relates to the treatment of adult patients with hepatocellular carcinoma (HCC) who had previously been treated with **Nexavar™** (active ingredient: sorafenib). **Stivarga™** is the first medicine to show a significant improvement in overall survival in second-line treatment of patients with HCC for whom there was previously no further treatment option. The product had been approved for second-line treatment of HCC in the United States in April 2017 and in Japan in June 2017.

In early September 2017, Bayer applied for marketing authorization to the European Medicines Agency (EMA) for the long-acting site-specifically PEGylated recombinant human Factor VIII (damoctocog alfa pegol) for the treatment of patients with hemophilia A. The regulatory submission is based on the data from the PROTECT VIII trial. In that trial, damoctocog alfa pegol offered patients protection from bleeds when used prophylactically once every seven days, once every five days, or twice per week. Bayer had already submitted an application for an authorization to manufacture biopharmaceutical products (Biologics License Application, BLA) for damoctocog alfa pegol to the U.S. Food and Drug Administration (FDA) in August 2017. In October 2017, Bayer submitted an application for the authorization of damoctocog alfa pegol in Japan as well.

In September 2017, the U.S. Food and Drug Administration (FDA) likewise granted Bayer approval for copanlisib, which will be sold under the tradename **Aliqopa™** in the future, for the treatment of previously treated patients with relapsed follicular B-cell non-Hodgkin lymphoma. The accelerated approval was granted based on the results of the CHRONOS-1 Phase II trial including 142 patients with indolent non-Hodgkin lymphoma (iNHL) whose disease had relapsed after two previous treatments, of which 104 patients had follicular B-cell non-Hodgkin lymphoma. The approval was issued on the basis of the overall response rate and must still be confirmed in a further trial. Copanlisib is an intravenous pan-class I phosphatidylinositol-3-kinase (PI3K) inhibitor with predominant inhibitory activity against PI3K-α and PI3K-δ isoforms.

Based on data from the EINSTEIN CHOICE Phase III study, in October 2017 Bayer and its development partner Janssen Research & Development, LLC, received additional marketing approval from the U.S. Food and Drug Administration (FDA) for the oral Factor Xa inhibitor **Xarelto™** (active ingredient: rivaroxaban) in the United States for a once-daily 10 mg dose of rivaroxaban for long-term prevention of recurrent venous thromboembolism. The authorization is for patients at continued risk of deep vein thrombosis and/or pulmonary embolism who have already received at least six months of standard anticoagulation therapy. The European Commission granted corresponding approval for **Xarelto™** in October 2017.

In November 2017, Bayer submitted a further application for **Xarelto™** to the European Medicines Agency (EMA) for a vascular dose of rivaroxaban in combination with acetylsalicylic acid (ASA) for the treatment of chronic coronary artery disease (CAD) or peripheral artery disease (PAD). This application is based on the results of the COMPASS Phase III clinical study. This demonstrated that a twice-daily dose of 2.5 mg rivaroxaban in combination with 100 mg ASA once a day reduced the combined risk of stroke, cardiovascular death and heart attack by an unprecedented 24% (relative risk reduction) in patients with CAD or PAD, compared with a once-daily dose of 100 mg ASA. In the United States, the application for marketing approval was submitted to the FDA in December 2017.

In December 2017, our cooperation partner Loxo Oncology, Inc., United States, initiated the submission of a rolling New Drug Application (NDA) for larotrectinib in the United States. The NDA relates to the treatment of unresectable or metastatic solid tumors with NTRK-fusion proteins in adults and children who require systemic therapy, where the disease has progressed following prior treatment and there is no acceptable alternative treatment. Bayer and Loxo Oncology are jointly developing larotrectinib. The active ingredient is in clinical development for cancers where the tropomyosin receptor kinase (TRK) gene becomes connected to other, unrelated genes (gene fusion). The rolling NDA submission is expected to be completed in early 2018.

Also in December 2017, Bayer obtained marketing approval in China for **Stivarga™** (active ingredient: regorafenib) for the treatment of adult patients with hepatocellular carcinoma (HCC) who have previously been treated with **Nexavar™** (active ingredient: sorafenib). In the Phase III RESORCE study (REgorafenib after SORafenib in patients with hepatoCEllular carcinoma), regorafenib demonstrated a significant and clinically relevant improvement in overall survival in second-line treatment of patients with HCC compared with a placebo. Regorafenib is the first product to be approved in China for second-line treatment of HCC.

In December 2017, Bayer received a Complete Response Letter from the U.S. Food and Drug Administration notifying it that its application for approval of the investigational drug product ciprofloxacin DPI (Dry Powder for Inhalation) for the treatment of adults with non-cystic fibrosis bronchiectasis (NCFB) cannot be approved in the present form. Bayer decided to discontinue development of Cipro DPI in NCFB for the time being and will evaluate possible further options for this asset.

See also A 1.3 “Global open innovation network”

Cooperations

We augment our own research capacities through collaborations and strategic alliances with external industrial and academic research partners. In this way we gain access to complementary technologies and external innovation potential.

In August 2017, Bayer and Vanderbilt University Medical Center in Nashville, Tennessee, United States, signed a five-year strategic research alliance to fight kidney disease. Both partners will work together on identifying and developing new potential compounds for treating kidney diseases. The goal is to rapidly transfer innovative approaches from the laboratory to preclinical development.

In November 2017, Bayer and PeptiDream Inc., a publicly listed Japanese biopharmaceutical company, concluded a drug discovery cooperation agreement. Their collaboration covers various therapeutic areas such as oncology and cardiology, as well as classes of drug targets. Using PeptiDream’s Peptide Discovery Platform System technology, the partners will be working together to identify novel drug discovery candidates for target structures that are difficult to address.

Also in November 2017, Bayer signed a global exclusive cooperation agreement with the biopharmaceutical company Loxo Oncology, Inc., Stamford, Connecticut, United States, for the development and commercialization of larotrectinib (LOXO-101) and LOXO-195. Both compounds are being investigated in global studies for the treatment of patients with cancers harboring tropomyosin receptor kinase (TRK) gene fusions, which are genetic alterations across a wide range of tumors resulting in uncontrolled TRK signaling and tumor growth.

The following table shows examples of the main cooperations.

A 1.3/6

Main Cooperations in 2017

Partner	Cooperation objective
Broad Institute	Strategic partnership in the field of genome and drug research in cardiology aimed at using findings from human genetics to develop new cardiovascular therapies and in the field of oncology to identify and develop active ingredients that target tumor-specific gene alterations
German Cancer Research Center (DKFZ)	Strategic partnership for the investigation and development of new therapeutic options in oncology, especially in immunotherapy
Evotec AG	Collaboration to identify development candidates for the treatment of endometriosis and kidney diseases
ImmunoGen, Inc.	Development of antibody-drug conjugates (ADCs) for novel tumor therapies
Janssen Research & Development, LLC of Johnson & Johnson	Development of Xarelto™ (rivaroxaban)
Loxo Oncology, Inc.	Development and marketing of larotrectinib (LOXO-101) and LOXO-195 for the treatment of cancer patients with a mutation of the TRK gene
Merck & Co., Inc.	Development and marketing collaboration in the field of soluble guanylate cyclase (sGC) modulation
MorphoSys AG	Development of antibody-drug conjugates using MorphoSys's HuCAL technology
Orion Corporation	Development of darolutamide (previously ODM-201) for the treatment of patients with prostate cancer
PeptiDream Inc.	Active ingredient research in various therapeutic areas and target classes with the help of PeptiDream's Peptide Discovery Platform System technology
Regeneron Pharmaceuticals, Inc.	Development of Eylea™ (aflibercept) to treat various eye diseases Development of a combination therapy of the angiopoietin2 (Ang2) antibody nesvacumab and aflibercept for the treatment of serious eye diseases
Vanderbilt University Medical Center	Strategic research alliance to identify and develop new potential active ingredients for the treatment of kidney diseases

In April 2017, Bayer decided not to exercise its option for further development and marketing of biopharmaceutical Wnt pathway inhibitors vantictumab (OMP-18R5) and ipafricept (OMP-54F28) as part of the partnership between Bayer and OncoMed Pharmaceuticals, Inc., United States. The small molecule program under the companies' collaboration continues without change.

Online Annex: A 1.3-4

A 1.3-4/1

Other Cooperations in 2017

Partner	Cooperation objective
BioInvent International AB	Access to antibody library with in-licensing of antibodies
Compugen Ltd.	Collaboration for the research and development of new immunotherapy approaches in oncology
Dimension Therapeutics, Inc.	Development of a novel gene therapy for hemophilia A
Ionis Pharmaceuticals, Inc.	Clinical development of the antisense molecule IONIS-FXIRx for the prevention of thrombosis and development of IONIS-FXI-LRx in the preclinical phase
Leica Biosystems Ltd.	Development of diagnostic tests in personalized oncology treatment
Ludwig Boltzmann Institute	Research into lung vascular disease, especially pulmonary hypertension
Merck & Co., Inc.	Codevelopment of tedizolid to treat various infections
Nektar Therapeutics [1]	Codevelopment of a targeted antibiotic inhalation therapy for lung infections (Amikacin Inhale)
Novartis AG	Development of a targeted antibiotic inhalation therapy for lung infections (ciprofloxacin DPI)
OncoMed Pharmaceuticals, Inc.	Discovery and development of novel anticancer stem cell therapeutics
Onyx Pharmaceuticals, Inc. of Amgen, Inc.	Codevelopment of Nexavar™ (sorafenib) for various types of cancer
Peking University	Research cooperation and establishment of a research center for joint projects
Seattle Genetics, Inc.	Access to technologies for antibody-drug conjugates (ADCs) for novel tumor therapies
Tsinghua University	Research cooperation and establishment of a research center for joint projects
University of Oxford	Strategic research alliance for the development of novel gynecological therapies
Ventana Medical Systems, Inc.	Development of diagnostic tests in personalized oncology treatment
Wilmer Eye Institute of Johns Hopkins University	Research and development of innovative drug products to treat serious back-of-the-eye diseases

[1] Terminated in December 2017

Consumer Health

Bayer worldwide; see also A 1.1.1/1

See also A 1.1.2

Group target 2017: transition of 25 consumer-validated concepts into early development

At Consumer Health, we concentrate on developing new nonprescription (OTC) products and solutions that improve the health and well-being of consumers in the areas of pain relief, dermatology, dietary supplements, digestive health, allergy relief and cold symptoms, as well as foot care and sun care. The focus lies on product developments that are aligned to the desires and needs of consumers. Our innovations range from new product formulations and packaging to technical applications and medical devices. In 2017, we developed around 50 new consumer-validated concepts, significantly exceeding our plans for the year. Consumer Health maintains a global network of research and development facilities, with sites in the United States, France, Germany and China. Another important part of our strategy is transferring current prescription medicines that are suitable for self-care to OTC status (Rx-to-OTC switches).

Crop Science

See also A 1.2.1 for information on the term sustainability

At Crop Protection, we pursue the goal of identifying and developing innovative, safe and sustainable active ingredients for use as insecticides, fungicides, herbicides and crop efficiency products for foliar and soil application as well as seed treatment. These substances also undergo further development for professional applications outside of farming (Environmental Science), such as in pest control and vector control to combat diseases transmitted by mosquitoes. They are also used to control weeds and maintain sport facilities and public parks. At Seeds, meanwhile, we are conducting research and development for optimized plant traits and are developing new varieties in cotton, oilseed rape / canola, soybeans, rice, wheat and vegetables. Our scientists are working on increasing the yield potential of crops, enhancing their quality and developing new herbicide

tolerance and insect resistance traits based on novel modes of action, and improving tolerance against disease and extreme weather conditions.

Crop Science maintains a global network of research and development facilities. While research is carried out centrally at a number of dedicated sites, development of crop protection products as well as plant breeding and trait development activities take place both at these sites and at numerous field testing and breeding stations in all regions. Our scientists working across the areas of seed traits, seed technology, seed breeding, agricultural chemistry and biologics closely collaborate as part of our integrated research approach. This optimally combines our complementary expertise in chemistry and biology.

Bayer worldwide; see also A 1.1.1/1

To provide farmers with sustainable agronomic recommendations, we develop digital products and services that support them through the use of specific data models, among other things, in evaluating conditions in the field. Our long-term goal is to help farmers to improve their yields by providing them with tailored recommendations.

Research and development pipeline

Our product pipeline contains numerous new crop protection products, seed varieties and enhanced products (life cycle management). We estimate the combined peak sales potential of products with launch dates between 2015 and 2020 to be more than €5 billion. In 2017, we launched confirmatory technical proof-of-concept field studies for two new active ingredients. For 2018, we are setting ourselves the target of launching confirmatory technical proof-of-concept field studies for three to four chemical / biological active ingredients or plant traits [1]. The following table shows selected new products that are expected to be launched by 2020.

Group target 2017: transfer of three new molecular entities (NMEs), plant traits or biologics into confirmatory technical proof-of-concept field studies;

See also A 1.2.1

A 1.3/7

Product Innovation Pipeline [1]

Market launch	Product group	Indication / crop	Product / plant trait
2018	Chemical and biological crop protection	Insecticide / SeedGrowth	Poncho / VOTiVO 2.0
2019	Seeds	Rice	Salt and flood tolerance (native trait)
2019	Chemical crop protection	Insecticide	Tetraniliprole
2019	Chemical crop protection	Fungicide	Tiviant™
2019	Seeds	Oilseed rape / canola	Herbicide tolerance
2019	Seeds	Oilseed rape / canola	New oil profile (native trait)
2019	Seeds	Rice	Dual disease tolerance (native trait)
2019	Seeds	Soybeans	Triple herbicide tolerance
2020	Seeds	Oilseed rape / canola	Dual herbicide tolerance (1)
2020	Seeds	Oilseed rape / canola	Dual herbicide tolerance (2)

[1] Planned market launch of selected new products
As of September 11, 2017

[1] We define a new plant trait as a specific characteristic that has not previously been available at Bayer for the crop plant in question.

New products and registrations

In 2017, Crop Science received marketing authorization in numerous countries for new mixtures and formulations, as well as for expanded indications for existing products.

In January 2017, the Ministry of Agriculture in China approved for import Balance™ GT soybeans with the new herbicide tolerance trait. Crop Science and MS Technologies LLC, which owns the rights to Balance™ GT, are codeveloping it as part of a cooperation agreement. The launch of the full Balance™ GT / Balance™ Bean system, including the corresponding herbicide, is planned for 2018 in the United States, the world's top soybean producer, pending the U.S. Environmental Protection Agency (EPA) commercial label registration of Balance™ Bean anticipated in 2018.

Furthermore, the new TwinLink™ Plus cotton technology was launched on the U.S. market in 2017. With three modes of action against insect pests added to the double herbicide tolerance, it provides season-long protection and further improves resistance management. In April 2017, Bayer received regulatory approval for the biological nematicide BioAct™ Prime DC in Greece. The new substance is intended for use in a variety of fruit and vegetables and directly targets eggs and larvae from nematode pests. Further approvals are planned in other European countries.

In May 2017, we launched a new rice seed in India that offers pest resistance and disease tolerance. The market launch in the Philippines is planned for 2018. In June 2017, we launched a rice seed in Bangladesh that offers flood tolerance.

Major success can be achieved with vegetables and many broad-acre crops using conventional and molecular plant breeding methods. As vegetables are intended especially to be marketed and eaten fresh, merchants and consumers have particularly strict requirements and expectations regarding their taste, appearance, nutrient content and shelf life. We continuously launch new vegetable seed varieties with these quality traits, such as the Sweet Spark cantaloupe variety developed in conjunction with U.S. retailer Walmart, Inc. In addition, we launch numerous new broad-acre crop varieties every year.

Environmental Science also launched new products in 2017. These included the Exteris™ fungicide for the maintenance of golf courses, as well as Altus™, which is designed to protect ornamental plants against insect pests. We also expanded our Maxforce™ product range by adding insecticides for pest control. Bayer BEYOND, a new digital service platform, automates the work performed by pest controllers and enhances rodent monitoring through predictive analysis.

Cooperations

See also A 1.3 "Global open innovation network"

Crop Science is part of a global network of partners from diverse segments of the agricultural industry and academic research. In 2017, we entered into new research partnerships and extended existing collaborations. A selection of these is detailed below.

In June 2017, Bayer signed an agreement with Sumitomo Chemical Company Ltd., Tokyo, Japan, for fungicide mixes used to control soybean diseases in Brazil. The goal of combining a new Sumitomo Chemical fungicide with established Bayer fungicides is to develop an effective solution for controlling widespread plant diseases such as soybean rust. The product registration applications were submitted in 2017 as expected.

In June 2017, Bayer also signed a two-year research agreement with the Shanghai Institutes for Biological Sciences (SIBS) of the Chinese Academy of Sciences to increase wheat yields using new mathematical models and computer simulations for more efficient photosynthesis.

As part of their research cooperation, Bayer and KWS SAAT SE, Germany, granted a long-term license to Belgian company SESVanderHave N.V. for their new CONVISO™SMART sugar beet cultivation system in June 2017. The technology is based on conventionally bred sugar beet varieties with tolerance toward certain herbicides and helps to ease weed management.

In July 2017, Bayer and the Israeli company Netafim Ltd., which is based in Tel Aviv, joined forces to enhance the application of crop protection products. The new approach, called DripByDrip, will enable farmers to water their fields and apply crop protection products in a more targeted way using Netafim's drip irrigation technology. We expect the solution to be launched in Mexico in mid-2018.

In August 2017, Bayer and the Citrus Research and Development Foundation (CRDF), a nonprofit organization supporting citrus growers in Florida, United States, signed a research collaboration agreement to find solutions to citrus greening plant disease currently threatening the global citrus production and juice industry.

In addition, Bayer and Rothamsted Research, Harpenden, United Kingdom, formed a strategic alliance in August 2017 to develop digital solutions aimed at detecting and sustainably managing pests, pathogens and weeds.

Bayer and the nonprofit organization Quantified Planet, Vaxholm, Sweden, signed a licensing and cooperation agreement in August 2017. Under the agreement, Bayer is providing proprietary, crowd-sourced data from more than 70 countries on certain plant varieties and their location, prevalence and distribution. Quantified Planet makes these data available worldwide for use in scientific research in the field of biodiversity.

Bayer and Robert Bosch GmbH, Germany, signed a three-year cooperation agreement in September 2017, with the objective of developing a smart spraying technology to make the application of crop protection products more efficient and facilitate a more targeted use of herbicides.

Bayer and the Greek Institute of Molecular Biology and Biotechnology, which forms part of the Foundation of Research and Technology Hellas (IMBB-FORTH), announced a five-year research collaboration in September 2017. This collaboration will seek to investigate insect gut physiology for the development of new insecticides.

The following table provides an overview of strategically important long-term cooperations that are currently ongoing.

A 1.3/8

Crop Science: Important Cooperations

Partner	Cooperation objective
Citrus Research Development Foundation	Search for solutions to citrus greening disease, which currently threatens the global citrus production and juice industry
Commonwealth Scientific and Industrial Research Organisation (CSIRO)	Increase in wheat yields by means of native plant traits – discovery, validation and integration
Elemental Enzymes AG	Use of microbes to improve soil health and thereby increase crop productivity
Embrapa	Cooperation on several R&D objectives in various areas of relevance for agriculture in Brazil, e.g. Asian soybean rust
Jülich Research Center	Research collaboration focused on phenotyping for plant breeding, research into plant traits and the development of biologicals
Grains Research and Development Corporation (GRDC)	Herbicide Innovation Partnership for the discovery and development of innovative weed management solutions
Innovative Vector Control Consortium (IVCC)	Joint development of new substances to control mosquitoes that transmit diseases such as malaria and dengue fever
Quantified Planet	Licensing and cooperation agreement under which Bayer will make freely available proprietary, crowd-sourced data from more than 70 countries on certain plant varieties and their location, prevalence and distribution
Robert Bosch GmbH	Research collaboration focused on developing a smart spraying technology to make the application of crop protection products more targeted and thus more efficient
Rothamsted Research	Strategic framework agreement to support a digital revolution for detecting and sustainably managing biotic threats such as pests, pathogens and weeds
Targenomix GmbH	Development and application of systems biology approaches to achieve a better understanding of metabolic processes in plants and facilitate the development of new herbicides and safeners

You can find details of our open innovation initiatives Grants4Targets™ and Grants4Traits™ in A 1.3 “Global Open Innovation Network.”

Animal Health

At Animal Health we focus our research and development activities on antiparasitics, antibiotics, medicines to treat noninfectious disorders and nonantibiotic alternatives for infectious diseases. We improve the health and well-being of companion and farm animals through innovations. Animal Health pursues the “one health” concept: We offer animal health products that reduce the risk of transmission of disease pathogens to humans, such as endoparasiticides for cats and dogs or ectoparasiticides to protect especially against fleas and ticks. Through our initiative focusing on companion vector-borne diseases (CVBD™) and with the leading global scientists who participate in this initiative, we are setting trends in basic research and the fight against vector-borne diseases. In our central research activities, we cooperate closely with the research departments at Pharmaceuticals and Crop Science.

www.cvbd.org/

New products and registrations

In January 2017, the European regulatory authorities approved PolyVar™ yellow, a new product to protect honey bees against the Varroa mite. This decision was implemented in national law in more than 20 countries during the year.

Cooperations

Animal Health also reinforces its business by continually identifying further product development candidates through new and existing collaborations. We work closely together with our partners in areas such as the development of innovative technologies, application innovations and lead structure optimizations.

1.4 Sustainable Conduct

1.4.1 Commitment to Employees and Society

Attracting, developing and retaining the best employees

Defining our corporate culture through dialogue, diversity and innovation

Advancing knowledge and leadership skills

Unreserved commitment to supporting human rights

Wide-ranging societal engagement

1.4.1.1 Employees

Bayer's business success is based to a large extent on the knowledge, skills, commitment and satisfaction of our employees. As an employer we offer our employees attractive conditions and wide-ranging individual development opportunities such as a highly effective system of vocational and ongoing training. Alongside professional training, we focus on conveying our corporate values (LIFE) and establishing a dialogue-oriented corporate culture based on trust, respect for diversity and equality of opportunity. Our responsible approach to structuring working conditions includes fair treatment at work, a transparent and equitable compensation system, company pension plans, the ability to combine working with family commitments, flexible worktime arrangements and a working environment that fosters health.

These are the cornerstones of our global human resources strategy, which is designed to safeguard and expand our business activities. They strengthen our competitiveness, and also reflect our social responsibility to provide secure employment and stable incomes, and to foster social cohesion. In this way, we want to recruit and retain the best employees for Bayer. Responsibility for the human resources strategy falls within the remit of the primary decision-making body of Bayer's HR function, which sets binding policies and defines priorities for all regions and organizational units.

We measure employees' satisfaction with Bayer as an employer with the help of institutionalized feedback discussions and the Group-wide Employee Survey, which is usually conducted about every two years. This enables us to monitor the effectiveness of our activities and make any necessary improvements. Together with IBM as our new service provider, we have revised the concept for as well as the structure and the content of our 2017 Employee Survey. For this reason, the results cannot be compared with those of previous years. The survey was completed by 80% of employees worldwide. Bayer's score of 79% on the Employee Engagement Index – collated from responses to questions about satisfaction, loyalty, advocacy and pride – was eight percentage points above the global benchmark of provider IBM.

Group target: continuous improvement in employee satisfaction; see also A 1.2.1

GRI G4-26

Employee data

Slight increase in Group employee numbers

On December 31, 2017, Bayer employed 99,820 (2016: 99,592) people worldwide. In Germany we had 31,620 (2016: 30,603) employees, which was 31.7% of the total Group workforce (2016: 30.7%).

Bayer AG key data: see also A 1.4.4

There was a reduction in the number of employees in the Latin America, Asia/Pacific and North America regions, but an increase in the Europe/Middle East/Africa region. While the number of employees in the segments decreased, there was an increase in the number included in the Reconciliation[1]. This change was mainly due to the reorganization of the Group initiated in 2016. Employees in service functions, which were previously part of a segment, were assigned to the respective units in the corporate functions and country platforms in 2017. The breakdown by function

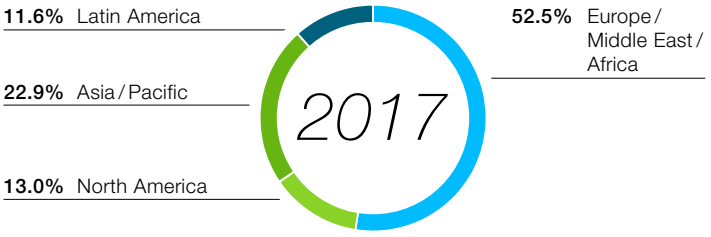
[1] Reconciliation encompasses all business activities – especially cross-segment service functions – that are not allocated to any of our reporting segments

A 1.4.1.1/1

Employee Data

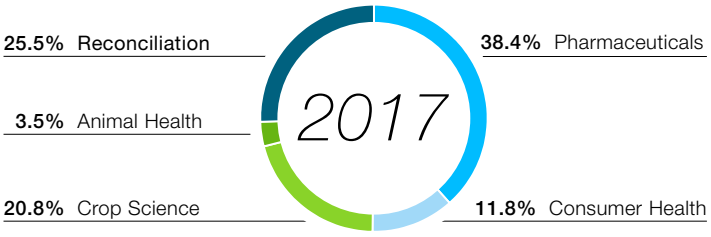
	2016	2017	Change in %
Total	**99,592**	**99,820**	**0.2**

by Region



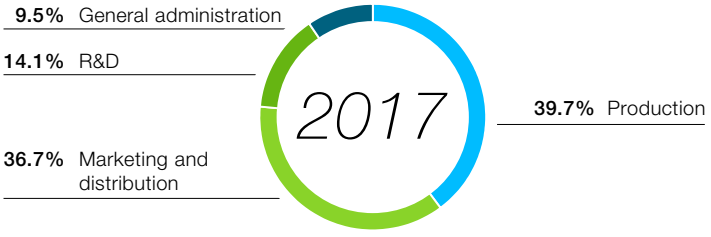
	2016	2017	Change in %
Europe/Middle East/Africa	50,970	52,380	2.8
North America	13,212	13,001	–1.6
Asia/Pacific	23,290	22,852	–1.9
Latin America	12,120	11,587	–4.4

by Segment



	2016	2017	Change in %
Pharmaceuticals	40,093	38,295	–4.5
Consumer Health	12,821	11,760	–8.3
Crop Science	22,399	20,736	–7.4
Animal Health	3,957	3,527	–10.9
Reconciliation[1]	20,322	25,502	25.5

by Function

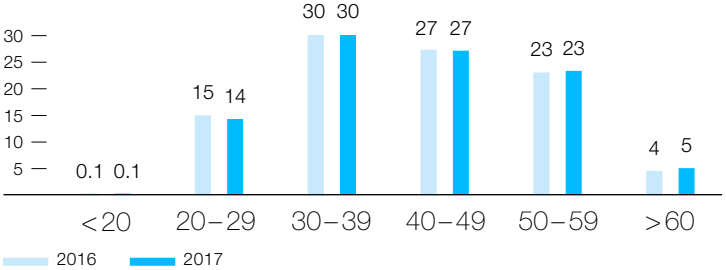


	2016	2017	Change in %
Production	40,288	39,669	–1.5
Marketing & distribution	36,783	36,622	–0.4
R&D	14,213	14,041	–1.2
General administration	8,308	9,488	14.2

by Gender

	Women		Men	
	2016	2017	2016	2017
Europe/Middle East/Africa	20,577	21,366	30,393	31,014
North America	5,645	5,620	7,567	7,381
Asia/Pacific	8,804	8,758	14,486	14,094
Latin America	4,477	4,354	7,643	7,233
Total	39,503	40,098	60,089	59,722

by Age Group in %



Fluctuation in %

	Voluntary		Total	
in %	2016	2017	2016	2017
Women	5.2	5.2	13.3	10.1
Men	4.5	4.5	13.1	10.7
Total	4.8	4.8	13.2	10.4

2016 figures restated; number of employees in full-time equivalents (FTE)
[1] Reconciliation encompasses all business activities – especially cross-segment service functions – that are not allocated to any of our reporting segments

shows more employees working in administration and a slight decrease in the number employees working in production and research and development. The proportion of women in the workforce increased by 0.5 percentage points to 40.2%. In 2017, there was no significant change in the age structure compared with the previous year.

On the reporting date, our employees had worked for the Bayer Group for an average of ten years. The rate of employee-driven terminations (voluntary fluctuation) in 2017, at 4.8%, was level with the previous year's figure. The overall fluctuation rate was 10.4%, a decrease of 2.8 percentage points compared with the previous year. This figure includes all employer- and employee-driven terminations, retirements and deaths. This shows that we were again successful in retaining staff in the company for long periods. Our workforce includes only a small number of employees on temporary contracts (4.4%) and hardly any temporary employees from staffing agencies. Bayer uses temporary personnel from staffing agencies primarily in response to short-term personnel requirements, fluctuations in order levels, temporary projects or long-term illness.

Online Annex: A 1.4.1.1-1

A 1.4.1.1-1/1

Employees[1] by Employment Status, Region and Gender 2017

	Permanent employees			Temporary employees		
	Women	**Men**	**Total**	**Women**	**Men**	**Total**
Europe / Middle East / Africa	20,209	29,449	49,658	1,156	1,566	2,722
North America	5,532	7,238	12,770	88	143	231
Asia / Pacific	8,488	13,577	22,065	270	517	787
Latin America	4,197	6,731	10,928	158	501	659
Total	**38,426**	**56,995**	**95,421**	**1,672**	**2,727**	**4,399**

[1] The number of employees on either permanent or temporary contracts is stated in full-time equivalents (FTE). Part-time employees are included on a prorated basis in line with their contractual working hours.

The next table contains further information on the breakdown of employee fluctuation by region, gender and age.

A 1.4.1.1-1/2

Employee Fluctuation[1] by Region, Gender and Age

	Europe / Middle East / Africa		North America		Asia / Pacific		Latin America		Total	
in %	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Women	**9.8**	**7.9**	**16.0**	**10.7**	**18.3**	**14.2**	**16.3**	**12.3**	**13.3**	**10.1**
<30[2]	18.4	17.9	18.3	16.9	21.2	18.0	23.0	16.1	20.1	17.7
30–49	9.6	7.0	14.4	10.0	16.9	12.3	14.9	12.0	12.6	9.3
>=50[3]	6.4	5.2	17.7	10.4	19.7	17.6	14.3	8.6	10.2	7.2
Men	**7.9**	**7.0**	**16.2**	**11.3**	**20.1**	**15.0**	**17.7**	**17.2**	**13.1**	**10.7**
<30[2]	19.7	16.3	23.9	20.0	29.5	22.9	28.9	39.5	25.3	22.3
30–49	7.0	6.1	12.5	10.2	18.1	13.3	14.0	13.3	11.7	9.6
>=50[3]	5.9	5.7	19.5	11.1	13.4	10.5	21.3	12.3	10.0	7.5
Total	**8.6**	**7.4**	**16.1**	**11.0**	**19.4**	**14.7**	**17.2**	**15.4**	**13.2**	**10.4**

2016 figures restated
[1] The data include all employer- and employee-driven terminations, retirements and deaths.
[2] The comparatively high proportion of employees in the <30 age group is due to the inclusion of employees on temporary contracts (working for 2–6 months of the year) and other short-term employees. It does not include apprentices.
[3] The fluctuation rates for the >= 50 age group are mainly due to retirements.

In Germany, temporary staff make up 2.4% of the total workforce. At our significant locations of operation, the average is 4.5%.

Significant locations of operation: see Glossary

Attracting, developing and retaining the best managers and employees

Employer branding targets both current and prospective employees

Innovations, changing customer requirements and a strong competitive environment are just some of the reasons we welcome open-minded employees who question the status quo. Our globally established employer brand "Passion to Innovate | Power to Change" describes our work culture and makes clear what we expect of our employees and, at the same time, what we as a company offer them.

We use our employer brand internally to enhance employee committment and externally to position the company on the employment market. Our excellent reputation as an employer is shown by numerous external surveys and awards, including being named best employer in Germany, Brazil and China in 2017.

In total, the Bayer Group hired 11,731 new employees in 2017.

Online Annex: A 1.4.1.1-2

A 1.4.1.1-2/1

New Hires[1] by Region, Gender and Age

	Europe / Middle East / Africa		North America		Asia / Pacific		Latin America		Total	
	2016	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Women	**2,148**	**2,595**	**681**	**510**	**1,176**	**1,224**	**593**	**573**	**4,598**	**4,902**
<30	1,057	1,162	171	121	652	669	315	303	2,195	2,255
30–49	986	1,273	348	283	500	535	275	259	2,109	2,350
>=50	105	160	162	106	24	20	3	11	294	297
Men	**2,621**	**3,162**	**863**	**592**	**1,889**	**1,780**	**968**	**1,295**	**6,341**	**6,829**
<30	1,374	1,562	230	159	1,044	1,015	518	646	3,166	3,382
30–49	1,102	1,415	426	323	824	726	426	610	2,778	3,074
>=50	145	185	207	110	21	39	24	39	397	373
Total	**4,769**	**5,757**	**1,544**	**1,102**	**3,065**	**3,004**	**1,561**	**1,868**	**10,939**	**11,731**

2016 figures restated
[1] Converted into full-time equivalents (FTE)

High level of vocational and ongoing training

www.bayer.com/career

To meet the need for skilled employees, Bayer provides sound training in more than 20 different occupations and offers more vocational training places than required to meet its needs. In 2017, 746 young people started a vocational training course at Bayer in Germany alone. In addition, Bayer offers trainee programs in various areas for those embarking on a career and internships for students around the world.

www.bayer.com/training

Furthermore, employees in all fields are able to take part in extensive ongoing training opportunities. We bundle our Group-wide continuing education offerings in the Bayer Academy, which offers both continuous professional training and systematic development of managerial employees and has received numerous international awards.

Significant locations of operation: see Glossary

On average, employees at our significant locations of operation received 23.4 hours of vocational and ongoing training in 2017. In 2017, the average cost of training per employee was €418.

Online Annex: A 1.4.1.1-3

A 1.4.1.1-3/1

Training Activities in Hours in 2017 by Employee Group and Gender[1]

	Women	Men	Total
Employee group			
Senior management	28.0	24.4	25.5
Junior management	32.1	27.5	29.5
Specialists	22.4	15.7	18.4
Overall average	**25.8**	**19.5**	**22.1**

[1] Selected training activities in the countries covered by the global training system, in which we generated approximately 80% of our sales in 2017; the gender-specific averages assume 50% women and 50% men for the United States and Japan as statutory regulations preclude differentiation by gender in these countries.

Feedback on employee performance

Specific and differentiated feedback forms the basis for positive personal development. Bayer encourages a culture of candid feedback to help employees achieve their individual goals. This is supported by a Group-wide performance management system.

In feedback discussions, employees have the opportunity to receive feedback from their supervisors on fulfillment of their professional and behavioral objectives. This assessment also determines one-third of their variable compensation. In 2017, about 70.6% of our total workforce participated in these feedback discussions. Of the participants, 45% were female and 55% male.

Wide-ranging career opportunities

Thanks to our wide-ranging business activities, we offer employees throughout the Group good opportunities for development. Regular Development Dialogues between employees and supervisors provide an opportunity to discuss the employees' further career development perspectives. Some 36,112 Development Dialogues were held and documented in 2017. A total of 34% of employees participated in Development Dialogues. Vacancies throughout the Bayer Group, from nonmanagerial right up to management level, are advertised via a globally accessible platform. International assignments are also an important element in employee development. Around 940 employees around the world participated in international assignments in 2017.

Corporate culture: dialogue, diversity, innovation

Ethical standards

Fairness and respect are central elements of our corporate culture. That includes observing Group-wide standards of conduct and protecting employees from discrimination, harassment and retaliation. These standards are set forth in our Corporate Policy "Fairness and Respect at Work." With the help of training, videos and our internal websites, Bayer employees around the world are provided with guidance on how to comply with this corporate policy.

Child and forced labor are strictly prohibited at Bayer in accordance with the core labor criteria of the International Labour Organization (ILO). This prohibition is set out in our binding Human Rights Policy and applies Group-wide.

See also A 1.4.1.2

Communication at all levels

Employees can use the internal crowdsourcing platform WeSolve to pose questions relating to internal matters at Bayer. These are then answered together with other employees with whom the person asking the question does not normally have any contact.

We involve our employees in business processes through active dialogue. Informing staff promptly and extensively about upcoming changes, in compliance with the applicable national and international regulations, is very important to us. We engage in open and trustful dialogue with employee representatives.

GRI G4-26

GRI G4-26

Online Annex: A 1.4.1.1-4

The main dialogue formats are regular employee assemblies, information events for managers and the European Forum, at which employee representatives from all European sites engage in discussion with the Board of Management on issues of central relevance to the company. Our employees have the opportunity to discuss company-specific issues and scope for optimization via various communication channels.

To promote a culture of innovation at the workplace, two platforms for making work-related suggestions are available to employees in Germany: the Bayer Ideas Pool and the Ideas Forum. The suggestions made by employees on improving processes, occupational safety and health protection are rewarded and utilized. More than 3,200 ideas were submitted in 2017. Around 47% of the suggestions for improvement evaluated in 2017 were implemented. In the first year of implementation alone, those improvements that led to quantifiable benefits generated savings of more than €1.5 million. In 2017, Bayer distributed bonuses of around €790 thousand for the implemented proposals.

Diversity and internationality are hallmarks of Bayer

Diversity, Group Leadership Circle, senior management: see Glossary

Group targets 2020: increase in the proportion of senior managers from outside the E.U., the U.S.A. and Canada to 25%;

increase in the proportion of women in senior management to 35%

See also A 4.1
See also A 1.2.1

We promote a diverse employee structure, through which we gain a better understanding of changing markets and consumer groups, get access to a broader pool of talented people and benefit from enhanced innovative and creative abilities.

That is why mutual understanding and a gender and cultural balance are important success factors at Bayer. Overall, the Group employs people from around 150 different nations. Around 21% of our senior managers come from outside Western Europe, the United States and Canada. We aim to increase this to 25% by 2020 in accordance with our Group target. At our significant locations of operation we hired 330 employees for senior management in 2017, 70% of whom are employed in their country of origin. The Group Leadership Circle currently comprises 29 nationalities, with around 66% of its members coming from the country in which they are employed.

Bayer for many years has endeavored to achieve a better gender balance in management. By the end of 2017, Bayer had raised the proportion of women at senior management level to more than 32% (2016: 31%). In line with our Group target, we aim to raise this to 35% by 2020. Information on diversity in our Board of Management and our Supervisory Board can be found in our Corporate Governance Report.

Online Annex: A 1.4.1.1-5

The next table shows the proportion of men and women in various employee categories.

A 1.4.1.1-5/1

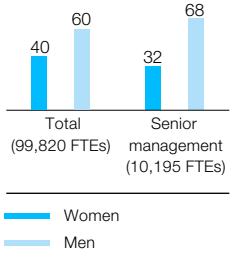
Bayer Group Workforce Structure [1]

	Women		Men		Total	
	2016	**2017**	**2016**	**2017**	**2016**	**2017**
Senior management	2,974	3,297	6,605	6,898	9,579	10,195
Junior management	10,498	11,139	14,295	14,536	24,793	25,675
Skilled employees	26,031	25,662	39,189	38,288	65,220	63,950
Total	**39,503**	**40,098**	**60,089**	**59,722**	**99,592**	**99,820**
Apprentices	703	649	1,416	1,386	2,119	2,035

2016 figures restated
[1] Number of employees converted into full-time equivalents (FTE)

A 1.4.1.1-5/2

Proportion of Women in the Workforce 2017
in %



The proportion of women also increased in the Group Leadership Circle. By year end 2017, it was made up of 18% women (2010: 7%) and 82% men (2010: 93%).

As a signatory to the United Nations Women's Empowerment Principles and the Diversity Charter corporate initiative, we pursue an inclusive approach. Diversity is integrated into all relevant human resources processes and driven forward by the management.

Online Annex: A 1.4.1.1-6

The seven Women's Empowerment Principles sum up how women can be strengthened in the workplace, on the employment market and in the community. Furthermore, our company is also a founding member of the German "Chefsache" network sponsored by German Chancellor Angela Merkel. Its members are committed to working together to develop practically oriented strategies to drive diversity and gender balance in their organizations.

As a socially responsible company, we are also committed to supporting the needs of people with disabilities. We employ some 2,300 people with disabilities in 29 countries, representing around 2% of our total workforce. 40% are female and 60% male. Most employees with disabilities work for our companies in Germany, where they made up 5.1% of the workforce in 2017.

Creating attractive working conditions

Competitive compensation and variable pay

Our compensation system combines a basic salary reflecting performance and responsibility with elements based on the company's success, plus extensive additional benefits. Adjustments based on continuous benchmarking make our compensation internationally competitive. This includes, among other things, the uniform evaluation of all managerial positions throughout the Group.

We attach great importance to equal pay for men and women, providing fair compensation and informing our employees transparently about the overall structure of their compensation. Bayer voluntarily pays employees on both permanent and temporary employment contracts in excess of the statutory minimum wage in many of the countries in which we operate.

Online Annex: A 1.4.1.1-7

Binding and transparent compensation structures

At Bayer, individual salaries are based on each employee's personal and professional abilities and the level of responsibility assigned to them. At the managerial level, this is based on uniform evaluation of all positions throughout the Group using the internationally recognized Hay method. In areas of the Group and jobs that fall within the scope of a binding collective bargaining agreement, there are no differences in pay based on gender either. This also applies for the compensation of apprentices. In the Emerging Markets and developing countries, compensation levels are aligned to local market conditions. In the majority of cases, full- and part-time employees at our significant locations of operation receive the same rates of pay. The situation differs with regard to employees on temporary contracts as they are not entitled to long-term compensation components such as pension plans in some countries.

Significant locations of operation: see Glossary

Our compensation concept also includes variable one-time payments. Approximately €640 million is earmarked for bonus awards to employees for 2017 under the Group-wide short-term incentive (STI) program (2016: approximately €1,070 million for employees in continuing operations). In many countries, employee stock programs enable our staff to purchase Bayer shares at a discount. We also offer senior managers throughout the Group "Aspire," a uniform long-term compensation program based on the development of the share price.

Short-term incentive program: see Glossary

Bayer AG key data: see also A 1.4.4

See also Note 12 to B Consolidated Financial Statements

Our personnel expenses for continuing operations amounted to €9,528 million in 2017 (2016: €9,459 million). The change was mainly due to expenses related to compensation adjustments, while bonus payments were considerably lower.

See also Note 25 to B Consolidated Financial Statements

Alongside attractive compensation for their work, Bayer contributes to the financial security of its present and former employees after their retirement. Personnel expenses in 2017 included pension expenses of €933 million. Payments of €1,051 million were made in 2017 to current retirees. The value of total pension obligations at the end of 2017 was €24,492 million.

Bayer AG key data: see also A 1.4.4

A 1.4.1.1/2

Personnel Expenses and Pension Obligations

€ million	2016	2017
Personnel expenses	9,459	9,528
of which pension expenses	880	933
Pension obligations [1]	28,995	24,492
Pension benefits paid [2]	1,041	1,051

2016 figures restated
[1] Present value of defined benefit obligations for pensions and other post-employment benefits as at December 31; including Covestro until December 31, 2016
[2] Including Covestro until deconsolidation

Work-life balance

We offer our employees flexible working hours and support in child care and caring for close relatives. In many countries our commitment in this area goes beyond the statutory requirements.

In 2017, the Bayer Group had some 9,100 part-time employees, primarily in Europe. This figure represents 9% of the total number of employees.

Online Annex: A 1.4.1.1-8

A 1.4.1.1-8/1

Percentage of Part-Time Employees by Region and Gender

	Women		Men		Total	
%	2016	2017	2016	2017	2016	2017
Europe / Middle East / Africa	22.9	23.2	10.1	10.8	15.4	16.0
North America	1.1	1.0	0.1	0.1	0.5	0.5
Asia / Pacific	3.0	3.4	0.2	0.3	1.3	1.5
Latin America	0.1	0.1	0.0	0.0	0.1	0.1
Total	**13.1**	**13.5**	**5.2**	**5.7**	**8.4**	**8.9**

2016 figures restated

Significant locations of operation: see Glossary

Bayer enables both men and women to take parental leave. Since national parental leave regulations vary widely from country to country, we only compile data for our significant locations of operation. 1,639 women and 950 men at these locations took parental leave in 2017. By the end of the year, 1,977 employees on parental leave had returned to work.

Online Annex: A 1.4.1.1-9

The next table shows the number of employees who have returned after selecting either the standard statutory parental leave program of up to three years per child or Bayer's more far-reaching "Family & Career" model (up to six years), using Germany as an example. By the end of 2017, 60.9% had returned to work. 43.0% of women and 83.0% of men who have taken parental leave since 2015 have returned to work.

A 1.4.1.1-9/1

Employees Returning from Parental Leave using Germany as an Example

	Women		Men		Total	
	%	Absolute	%	Absolute	%	Absolute
Employees who have taken parental leave since 2015	**55.2**	**1,021**	**44.8**	**830**	**100.0**	**1,851**
Still on parental leave / with a dormant employment contract	51.6	527	16.4	136	35.8	663
Returned by 2017	43.0	439	83.0	689	60.9	1,128
Terminated [1]	5.4	55	0.6	5	3.2	60

[1] Includes employees who have left the company due to employer- and employee-driven terminations, severance agreements and expiration of contracts

Bayer has introduced uniform conditions for mobile working (home office) in Germany through a General Works Agreement with the Works Council. Through the "BayZeit" long-term account in Germany, employees can convert part of their salary into free time, which they can later take off to care for children or close family members, or to take part in an advanced training course, for example. In 2017, this program was expanded to include offerings for trainees and family leave.

The General Works Agreement on caring for close relatives helps Bayer employees in Germany to combine working with their role as carers through adapted worktime models and temporary paid leave.

Initiatives to promote health and ensure safe working conditions

In 2017, Bayer adopted a new global framework concept to promote employee health and quality of life (BeWell@Bayer). It expands the core aspect of health into a comprehensive approach, targets further improvements in the daily work environment and is intended particularly to help balance employees' professional and private lives. We aim to provide employees in all countries with access to affordable and targeted health offerings such as regular medical check-ups, sports programs, rehabilitation and on-site medical care.

Our occupational health management activities include many regular preventive programs, ranging from ergonomic workplaces and stress management to incentive systems to promote healthy behavior. Established offerings such as the program to reduce the workload of older employees have been extended until 2020. Our employee representatives are included in operational health management and are actively involved in its development. We ensure safe working conditions and thus an environment where our employees can work without fear and undertake international business travel without risk.

Online Annex: A 1.4.1.1-10

Binding agreements at Group level

The Bayer European Forum – which brings together management and employee representatives – has signed the Luxembourg Declaration on Workplace Health Promotion in the E.U. This involves a network of around 200 companies which aims to identify and share best practices and encourages joint measures by employers, employees and society to improve health and well-being at the workplace.

Group-wide initiatives in Germany include the updated General Works Agreements on lifetime working and demographic change and on addressing demographic change at the nonmanagerial level at Bayer. These agreements contain a reduction in employee workloads that was extended to further age groups, as well as measures to ease the return to work of nonmanagerial employees after long-term illness, and an extensive health screening program for all employees. More than 98% of those who were eligible took part in the program to reduce the workload of older employees in 2017.

A company pension plan is available to

75%

of Bayer employees.

Social responsibility for employees worldwide

A company pension plan is available to 75% of Bayer employees worldwide. The benefits provided depend on the legal, fiscal and economic conditions in each country, employee compensation and years of service. Almost 98% of our employees worldwide either have statutory health insurance or can obtain health insurance through the company.

Online Annex: A 1.4.1.1-11

A 1.4.1.1-11/1

Health Insurance and Pension Coverage

	Health insurance [1]		Pension plans [2]	
%	2016	2017	2016	2017
Europe / Middle East / Africa	98	98	84	85
North America	100	100	100	100
Asia / Pacific	95	95	45	46
Latin America	100	100	56	57
Total	**98**	**98**	**74**	**75**

2016 figures restated
[1] Employer-assisted
[2] Programs to supplement statutory pension plans

Our social responsibility is also reflected in our approach to restructuring, which includes efforts to take account of our employees' interests. In Germany, which remains Bayer's largest operational base with 31,620 employees, business-related dismissals are excluded through the end of 2020 for a large proportion of employees under an agreement with the employee representatives.

Employees at all Bayer sites around the world have the right to elect their own representatives. In 2017, the working conditions for around 63% of our employees worldwide were governed by collective or company agreements. At various country companies, the interests of the workforce are represented by elected employee representatives who have a right to be consulted on certain personnel-related decisions. The contractually agreed working hours of our employees do not exceed 48 hours a week in any country.

Online Annex: A 1.4.1.1-12

A 1.4.1.1-12/1

Percentage of Collective Agreements by Region [1]

%	2016	2017
Europe / Middle East / Africa	82	84
North America	5	4
Asia / Pacific	53	52
Latin America	52	52
Total	**62**	**63**

2016 figures restated
[1] Percentage of employees covered by collective agreements, especially on compensation and working conditions

1.4.1.2 Global Respect for Human Rights

Bayer fully supports human rights and has set out its stance in a binding corporate policy, Bayer's Position on Human Rights. We are committed to respecting and fostering human rights within our sphere of influence and to reporting transparently on the results of our activities in this area. We also expect our business partners, and particularly our suppliers, to fully observe human rights. Our LIFE values and Corporate Compliance Policy also obligate all employees worldwide to conduct themselves fairly and in a compliant manner in dealings with colleagues, business partners and members of the community.

www.bayer.com/humanrights

Responsibility and management

The observance of human rights is an integral part of our sustainability management and our human resources strategy. Responsibility for this topic lies with the Board of Management member responsible for Human Resources, Technology and Sustainability, who is assisted by the Sustainable Development Committee (SDC) and, as of 2018, the Group-wide Human Rights Panel, which forms part of the SDC. Directives, processes, and management and monitoring systems control the implementation of human rights standards in business operations.

Last year, we took a current inventory of our due diligence activities with respect to human rights in our most important business processes and developed recommendations for action, particularly in terms of our reporting on these activities. Observing human rights is a cross-cutting issue at Bayer that impacts wide-ranging areas of influence and processes, such as:

- Employees:
  - Diversity, compensation, fairness and respect at the workplace
  - Prohibition of child and forced labor, and the right to freedom of association

See also A.1.4.1.1

- Safety:
  - Health and safety at the workplace
  - Plant safety to protect employees and the people who live near our production sites

See also A.1.4.3.2

- Product stewardship, also in relation to clinical studies and biodiversity

See also A 1.3 Pharmaceuticals, including A 1.4.3.1

- Procurement:
  - Sustainable supplier management, especially in terms of tackling child labor in the seed supply chain and in conflict minerals

See also A 1.4.2.1

We report in more detail on the various facets of our due diligence with respect to human rights in the relevant chapters.

Training and grievance mechanisms

We offer ongoing training programs to enhance employees' awareness of the importance of human rights in their day-to-day activities. In 2017, more than 47% of our employees received training in aspects of our Human Rights Position in training sessions totaling around 190,000 hours. Aspects of human rights are also covered in the training offerings for our suppliers.

The compliance organizations at the Group and country levels monitor compliance with our corporate policies. If there are signs of violations of our Human Rights Position, employees and members of the general public can contact the Bayer Compliance Officers at any time, even anonymously if desired. Alternatively, they can contact the worldwide compliance hotline.

See also A 4.2

Commitment

We engage in dialogue with other stakeholders on the topic of human rights and actively participate in committees and initiatives established to ensure their observance, such as the corresponding working groups of econsense, by contributing to discussions on implementing the National Action Plan (NAP) – Business and Human Rights and, in the supply chain, via our Together for Sustainability (TfS) industry initiative and the Pharmaceutical Supply Chain Initiative (PSCI).

Furthermore, we are a founding member of the U.N. Global Compact and respect the Universal Declaration of Human Rights and a range of globally recognized declarations applicable for multinational corporations. These include 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).

ILO core labor standards: see Glossary

We also support the U.N. Guiding Principles on Business and Human Rights, which establish global standards for preventing and combating possible human rights violations in connection with business activities. Bayer has also signed the WASH at the Workplace Pledge of the WBCSD (World Business Council For Sustainable Development) and thus undertakes to guarantee all our employees worldwide access to clean water, sanitary facilities and hygiene.

1.4.1.3 Societal Engagement

Social innovation: see Glossary

Bayer's societal engagement focuses on people working in the areas of education and science and health and social innovation who are committed to achieving a lasting improvement in living conditions. This is also true of an additional funding priority: sports and culture. In 2017, we invested a total of around €49 million (2016: €43 million) in charitable activities worldwide. Our involvement in professional soccer does not form part of our social sponsorship activities.

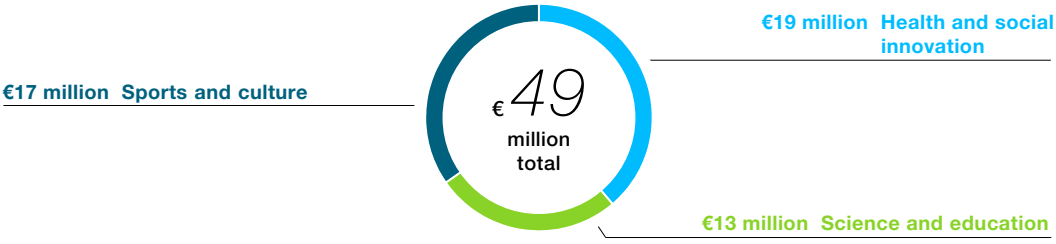
Bayer conducts its foundation work through two foundations linked to the company: the Bayer Science & Education Foundation for leading-edge research and talent promotion in the life sciences and medicine, and the Bayer Cares Foundation for social innovation and sustainable development.

An interdisciplinary functional unit is responsible for the strategic orientation and coordination of our societal engagement. Group-wide donation allocation and management policies form the basis for the foundation and donation activities. The Board of Management and internationally leading experts as independent judges are involved in major funding decisions. We work together with leading nongovernmental organizations, patient groups, foundations, scientific institutions, education partners and networks of experts around the world to implement our initiatives.

Online Annex: A 1.4.1.3-1

A 1.4.1.3-1/1

Societal Engagement in 2017



Health and social innovation

Aspirin Social Innovation Award

The Bayer Cares Foundation again presented the Aspirin Social Innovation Award in 2017. This award with total prize money of €100,000 per year is conferred around the world for groundbreaking solutions in the areas of health and nutrition. The supported initiatives are working on new solutions in the areas of preventive medical treatment of malaria and breast and cervical cancer, efficient nutrition, and communication options for blind people and families with autistic children.

Strengthening volunteering worldwide

Under the auspices of its International Volunteering Program, the Bayer Cares Foundation supported 113 volunteering projects by employees in 44 countries in 2017. The total funding amounted to more than €400,000. The selected projects help improve living conditions in the immediate vicinity of the company's sites.

Rapid assistance in the event of natural disasters

In 2017, Bayer again supported people experiencing acute hardship as a result of natural disasters with immediate aid and prevention projects. The total value of the donations of money, medicines and goods made by the company exceeded €1.5 million.

Access to Medicine

We have implemented various Access to Medicine activities to meet our global responsibility to society and enable people in developing countries and emerging markets to access our medical products.

See Online Annex A 1.2.1-1 in "Strategies of the Segments – Pharmaceuticals"

Science and education

Groundbreaking achievements

The Bayer Science & Education Foundation honors pioneering achievements in basic medical research with the Hansen Family Award. In 2017, the foundation presented the €75,000 award to two scientists. Professor Jens Brüning of the Max Planck Institute for Metabolic Research in Cologne and Professor Matthias H. Tschöp from the Helmholtz Diabetes Center in Munich were honored for their groundbreaking research contributions in the areas of obesity and diabetes.

Dr. David Seiffge from the Stroke Research Group in the Neurology Department at Basel University Hospital was honored with the Bayer Thrombosis Research Award. The physician was presented with the award, which includes a monetary prize of €30,000, for his clinical work pertaining to the management of non-vitamin-K-dependent oral anticoagulants (NOAK) in acute stroke patients.

Getting young people excited about science

In the context of Bayer's international talent promotion efforts, the Bayer Science & Education Foundation awarded 65 scholarships to students and apprentices with a total volume of some €417,000 in 2017. The funding mainly benefits international research projects. Overall, Bayer implemented individually tailored school support programs in more than 20 countries, working closely with universities, science museums and other educational organizations.

Under the auspices of its school support program, the Bayer Science & Education Foundation provided total funding of around €419,000 to 41 projects in the areas surrounding the company's sites. In this way, the company facilitated innovative teaching concepts at schools and other educational facilities in 25 German cities, as well as education programs to facilitate the integration of refugee children in Berlin and at the E.U.'s central refugee admission camp on the Greek island of Samos.

At the four German Baylab student laboratories, more than 8,500 children and young people took advantage of the company's scientific offerings in 2017 to supplement their school instruction or as a vacation program. The company has additional Baylabs in Mexico, Poland, the Netherlands, Romania, Bulgaria and, since 2017, the United Kingdom. The education program is supplemented by advanced training for teachers and mobile Baylab programs such as those in Argentina and South Africa.

Sports and culture

In 2017, Bayer extensively supported activities in the areas of recreational, disabled and competitive sports again. The Bayer sports clubs made a key contribution to the broad range of sporting activities around the German sites in North Rhine-Westphalia. The 23 clubs have a total of nearly 43,000 members. The larger clubs were also intensely involved as professional service providers for the company's occupational health management program.

In 2017, Bayer Arts & Culture again promoted artistic diversity through more than 120 music, dance, theater and art events. Bayer continued to expand the stARTacademy, which offers highly talented young artists comprehensive support – for example by bringing solo artists together with orchestras and providing financial assistance.

1.4.2 Responsibility in Value Creation

Sustainability criteria consistently anchored in the supply chain
Efficiency and flexibility in production and logistics strengthened
Ethical action shapes dialogue and partnership with our customers

We aim to offer our customers innovative products and high-quality solutions. This requires us to efficiently and responsibly steer processes at all value creation stages: in procurement, in production, in logistics and in distribution.

1.4.2.1 Procurement and Supplier Management

The procurement organization supplies the company with raw materials, goods and services all around the world. We exert influence on society and the environment through our procurement activities and supplier relationships. Not only economic, but also ethical, ecological and social principles are therefore anchored in our Procurement Policy, which is binding for all employees worldwide.

Procurement is a corporate function, the head of which reports directly to the Chief Financial Officer. Bayer has a diverse procurement portfolio due to the varying nature of its segments. Procurement acts centrally on behalf of all segments and leverages synergies by pooling know-how and procurement spend.

The following table provides key data on our procurement activities.

A 1.4.2.1/1

Procurement Activities

	2016	2017
Procurement spend in € billion	14.8	14.9
Spend in OECD countries (mainly Germany and U.S.A.) in € billion	12.2	12.2
Spend in non-OECD countries (mainly Brazil, India and China) in € billion	2.6	2.7
Number of suppliers	97,270	93,330
Number of countries	151	148

2016 figures restated

Bayer AG key data: see also A 1.4.4

€ 14.9 billion
Bayer's procurement spend in 2017

In our supply chain we take account of all types of suppliers and supplier diversity.

Procurement operates according to uniformly established procurement and supplier management processes. Long-term contracts and active supplier management for strategically important goods and services are important elements here. Thus, we not only minimize procurement-specific risks such as supply bottlenecks or significant price fluctuations, but also safeguard the Group's competitiveness and ensure smooth production processes. Close cooperation with and systematic integration of selected suppliers in innovation processes gives Bayer access to innovative solutions.

Bayer purchases locally wherever possible in order to respond promptly to the requirements of our sites, thereby simultaneously strengthening local economies. In 2017, this applied to 71% (2016: 71%) of our procurement spend at our main business locations, and to 71% (2016: 71%) of procurement spend in all countries worldwide. An overview of the main direct and production-related procurement materials in 2017 can be found online.

Local procurement: see Glossary

Online Annex: A 1.4.2.1-1

A 1.4.2.1-1/1

Main Direct Procurement Materials

Pharmaceuticals	Active ingredients (e.g. small molecules, biologics), radioactive ingredients (e.g. actinium, radium), intermediates (e.g epoxy phthalimide), raw materials (e.g. iodine, cell culture media, solvents), pharmaceutical excipients (e.g. celluloses, starches), packaging materials, medical devices, finished products (e.g. Zetia)
Consumer Health	Active ingredients (e.g. naproxen sodium, loratadine, paracetamol), vitamins (e.g. vitamin C and B), excipients and operation materials, finished products (e.g. Canesten™, Dr.Scholl's™, Berocca™), packaging materials
Crop Science	Active ingredients (e.g. mancozeb), excipients and solvents (e.g. rapeseed oil, toluene, ammonia), complex intermediates (e.g. pyridine polyfluoride), packaging materials
Animal Health	Finished products, active ingredients (e.g. moxidectin, praziquantel, Baycox-isocyanate), packaging materials (e.g. Seresto™ tins, spot-on tubes), raw materials, excipients

Renewable raw materials play only a subordinated role at Bayer due to the company's portfolio. They are primarily used when it makes technical, economic and ecological sense to do so.

Online Annex: A 1.4.2.1-2

RSPO and RTRS credits: see Glossary

Bayer uses small amounts of palm (kernel) oil and soy derivatives in the formulation of active ingredients or in active ingredient precursors. As part of our activities to promote sustainable agriculture, we are a member of the Roundtables on Sustainable Palm Oil (RSPO) and Responsible Soy (RTRS). To support the production of certified sustainable palm (kernel) oil and soy, we purchased RSPO and RTRS credits in 2017 according to the volumes we used.

Crop Science also cooperates intensively with the RTRS to provide mutual support in the certification of Brazilian soybean producers according to the high ecological, social and economic criteria of the RTRS.

At Pharmaceuticals, a number of hormones are synthesized based on sterols that result during the production of plant oils from soybeans, for example, as well as during wood processing. We additionally purchase various steroids that are manufactured from diosgenin or its intermediate stages. This substance is usually obtained from yam grown in countries such as China. We also use raw materials such as water, glucose, yeast, soybean starch, castor oil and corn steep water in our fermentation processes.

Consumer Health uses extracts of plants to manufacture plant-based pharmaceuticals. We take great care in the cultivation and extraction of raw materials, which are performed according to international standards, e.g. the GACP (Good Agricultural and Collection Practice) guidelines.

Bayer sustainability requirements defined in its Supplier Code of Conduct

Our supply chain is designed at both a global and regional level according to clear, sustainability-oriented criteria and standards. Bayer regards adherence to these standards as a crucial value-adding factor and an important lever for minimizing risks. A four-step process is thus established throughout the Group to improve sustainability practices in the supply chain, comprising the elements awareness-raising and supplier selection, evaluation and development. It is defined in a special instruction and centrally steered by the Sustainability team in Procurement. The process is implemented through cross-functional cooperation between the Procurement and the Health, Safety & Sustainability corporate functions.

Our sustainability requirements are established in the Bayer Supplier Code of Conduct, which is based on the principles of the U.N. Global Compact and our Human Rights Policy. It is available in 14 languages and covers the areas of ethics, labor, health, safety, environment and quality, and management systems. The code lays out the general basis of cooperation with our suppliers and is applied in their selection and evaluation.

The Supplier Code of Conduct is integrated into electronic ordering systems and contracts throughout the Bayer Group. Furthermore, our standard supply contracts contain clauses that authorize Bayer to verify suppliers' compliance with our sustainability requirements.

Evaluating the sustainability performance of our suppliers

Bayer verifies the observance of the code requirements by our suppliers through online assessments and on-site audits by external auditors. Suppliers are selected for these evaluations based on a combination of country and category risks as well as according to their strategic importance in line with our Group targets.

Bayer's goal was to have evaluated all strategically important suppliers by the end of 2017. This group includes suppliers with a major influence on business in terms of, for example, procurement spend and long-term collaboration prospects (three to five years). All in all, 99.5% (2016: 98%) of these suppliers were evaluated, the missing coverage being due to fluctuations inherent in the business. The remaining evaluations are scheduled to take place in the first quarter of 2018. By 2020, furthermore, we aim to evaluate all those suppliers with a significant procurement spend (> €1 million p.a.) that are regarded as potentially high-risk suppliers due to their combined country and category risk. Our target attainment as of 2017 was 93% (2016: 83%). In the case of new suppliers of this type, Bayer reserves the right to review their sustainability performance through an online assessment or an on-site audit.

↗ Group target 2017: evaluation of all strategically important suppliers

↗ Group target 2020: evaluation of all potentially high-risk suppliers with significant Bayer spend; see also A 1.2.1

The online assessments are carried out on Bayer's behalf by the service provider EcoVadis. The assessment criteria correspond to the requirements of our code and also take into account country- and industry-specific conditions and supplier size. EcoVadis evaluated 622 (2016: 649) suppliers on our behalf in 2017.

In addition, 57 (2016: 52) of our suppliers were audited on-site by external, independent auditors in 2017. The audit criteria include both the specifications of our code and industry-specific requirements that we have jointly laid out in the industry initiatives Together for Sustainability (TfS) and the Pharmaceutical Supply Chain Initiative (PSCI). The initiatives are intended to help standardize the sustainability requirements of suppliers in the chemical and pharmaceutical industries. Synergies are also created through the exchange of assessment and audit results within the respective initiatives. This will help us achieve our target of developing and introducing a new sustainability standard for our suppliers by 2020.

www.tfs-initiative.com
www.pscinitiative.org

↗ Group target 2020: development and establishment of a new sustainability standard for our supply base; see also A 1.2.1

Within the TfS initiative, a total of 1,794 (2016: 1,773) sustainability assessments were performed, also through EcoVadis, in 2017, along with 441 (2016: 241) audits, including in China, Japan, India and Brazil. Within the scope of PSCI the corresponding number of audits was 67 (2016: 51), including in India, China and Russia.

In addition, Bayer auditors evaluate selected new and existing suppliers particularly with regard to health, safety and environmental protection. Among others, these audits are performed on contract and toll manufacturing suppliers with an increased risk potential. A total of 115 (2016: 168) suppliers were evaluated by Bayer auditors in 2017.

Bayer reserves the right to terminate a supplier relationship if especially critical sustainability weaknesses have been identified during an online assessment or on-site audit and no improvement is observed during a re-evaluation. In 2017, Bayer was not prompted to end any supplier relationship due solely to sustainability performance.

Online Annex: A 1.4.2.1-3

A 1.4.2.1-3/1

Assessments and Audits of Bayer Suppliers

	2016	2017
Sustainability assessments [1] via the EcoVadis platform	649	622
Sustainability audits [2] by external auditors	52	57
Sustainability / HSE [3] audits by Bayer auditors	168	115

2016 figures restated
[1] Initial and re-assessments of suppliers working for Bayer; initiated by Bayer and shared via EcoVadis as part of the TfS initiative
[2] Initial and follow-up audits of suppliers working for Bayer; initiated by Bayer and shared as part of the TfS and PSCI initiatives
[3] Health, safety, environment

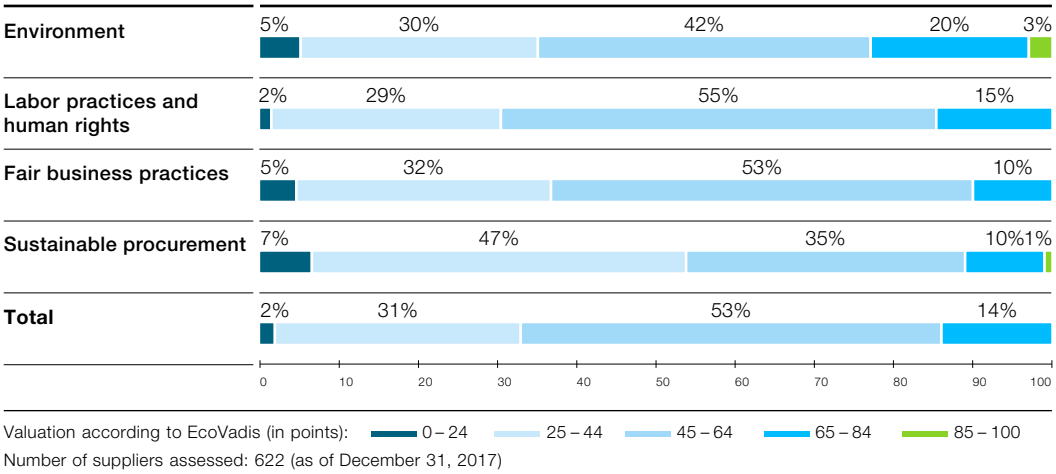
The online assessments and on-site audits are analyzed and documented in order to define specific improvement measures in the case of unsatisfactory results. In 2017, this applied above all to the categories of sustainable procurement and health and safety. In the event of critical results, Bayer requests the suppliers to rectify the identified weaknesses within an appropriate period of time based on specific action plans. Our regular monitoring shows that in 2017 348 of our 679 suppliers evaluated have improved their sustainability performance.

Online Annex: A 1.4.2.1-4

The online assessments undertaken by EcoVadis in 2017 identified a need for suppliers to improve particularly in the areas of sustainable procurement, environment and fair business practices. Suppliers who achieve less than 25 of 100 possible points are regarded as critical in terms of their sustainability performance.

A 1.4.2.1-4/1

Results of Online Supplier Assessments by Category



Number of suppliers assessed: 622 (as of December 31, 2017)

Audited suppliers demonstrated the greatest need for improvement in 2017 in the areas of health & safety and management systems. This concerned both audits initiated by Bayer and those shared within the TfS and PSCI initiatives. A supplier receives a critical result if a serious violation or several major findings in sustainability performance are identified. In 2017, 20 suppliers (3% of all assessed and audited suppliers) showed a critical result with regard to their sustainability performance.

Improvement measures in the supply chain taking effect

Through re-assessments or follow-up audits, we monitor the implementation of the improvements requested by us. In 2017, 550 suppliers underwent a re-assessment through the EcoVadis platform, of whom more than 60% improved their sustainability performance. Numerous suppliers voluntarily undergo a re-assessment after successfully implementing corrective measures. Ten follow-up audits verified sufficient rectification of previously identified deficiencies.

Additional verification processes were established for the fulfillment of further international regulations such as those requesting companies to disclose the origin of certain raw materials. This concerns, for example, so-called conflict minerals from regions such as the Democratic Republic of the Congo or neighboring countries. All 101 of our first-tier suppliers (2016: 117) who could potentially be impacted by this issue have been checked. “Conflict-free” status was confirmed for 60% (2016: 53%) of them. It was agreed with the remaining suppliers that they must ensure compliance with the requirements.

Conflict minerals: see Glossary

Training measures and dialogue on the issue of sustainability

We support our procurement employees in the implementation of sustainability requirements with targeted Group-wide training measures. We also offer our suppliers a wide range of development and dialogue opportunities on this subject.

GRI G4-26

Online Annex: A 1.4.2.1-5

Within the scope of our supplier sustainability evaluations, we have identified a country risk particularly for China and India. In this connection, we carried out intensive workshops and training courses in India both for our local procurement personnel and for external auditors of the PSCI Initiative. In China, Bayer used its Supplier Day 2017 to communicate its sustainability requirements. In 2017, we also conducted supplier training and workshops in China and India in cooperation with PSCI and TfS. Our two industry initiatives offer additional advanced training modules for our suppliers through the TfS Supplier Academy and the PSCI Sustainability Webinars.

Tackling child labor in the seed supply chain

A key challenge is tackling child labor in the seed supply chain of the Crop Science segment. Our position on child labor is unequivocal: Child labor is strictly prohibited at Bayer in accordance with the core labor standards of the International Labour Organization (ILO). We therefore also obligate our suppliers to strictly refrain from employing children.

www.bayer.com/child-care

Bayer has taken systematic action for years to prevent child labor in the cotton, rice and vegetable seed supply chain in India, Bangladesh, China, Thailand and the Philippines through its Child Care Program and conducts inspections locally. This program is being established in those countries in which there could be cases of child labor in seed production based on our risk assessment. We raise awareness of the issue among our suppliers and clearly communicate our requirements. Risk assessments were undertaken in 2017 for countries such as Paraguay, Uruguay, Argentina, Peru and Chile. The risk of child labor in our seed supply chain in those countries was found to be low due to government-based monitoring and the extensive use of mechanized processes in seed production. However, Bayer also audits suppliers in these countries and sensitizes our employees to this issue.

We recorded the majority of cases of child labor in India, which is why it is there that we implement most of our measures and inspections. The corporate auditor EY (formerly Ernst & Young), India, additionally carries out unannounced visits to cotton seed producers in four Indian districts.

The absolute number of child labor cases was in decline until 2016. However in 2017, we detected an increase in cases of child labor among cotton hybrid seed suppliers in India. These cases were identified predominantly among new suppliers in regions where Bayer had not previously been active. Bayer expanded the activities of the Child Care Program in the areas around the affected sites and carried out follow-up audits. We expect a reduction again in cases of child labor in the coming year as a result of our commitment.

Online Annex: A 1.4.2.1-6

Bonuses and sanctions for suppliers

Crop Science's comprehensive activities in its Child Care Program include the monitoring of the seed produced through wage-based labor. In this connection, specialized Bayer employees visit the fields of cotton, rice and vegetable seed producers, particularly during the planting season. Suppliers who can verify that they strictly observe our ban on child labor receive a bonus along with training in raising agricultural efficiency. Graduated sanctions are applied for noncompliance. These range from written warnings to termination of the contract in the case of repeated noncompliance.

Supporting school education as a key element

Bayer regards school attendance not only as essential for children's development but also as an effective tool for preventing child labor. We therefore also visit the parents of children we find working in the fields to convince them of the importance of school education. We promote this in India, for example, with the Learning for Life initiative within our Child Care Program, which focuses both on fostering scientific knowledge and on general vocational training. This covers everything from reintegrating children into the regular school system to vocational training measures. Between 2005 and the end of 2017, Learning for Life reached more than 6,400 children and young people.

Thanks to a stringent monitoring system, which is supported by local information and educational initiatives, there are only very few instances of child labor among our contractors. We immediately put a stop to any cases we detect and closely track further developments in this context through our Child Care Program.

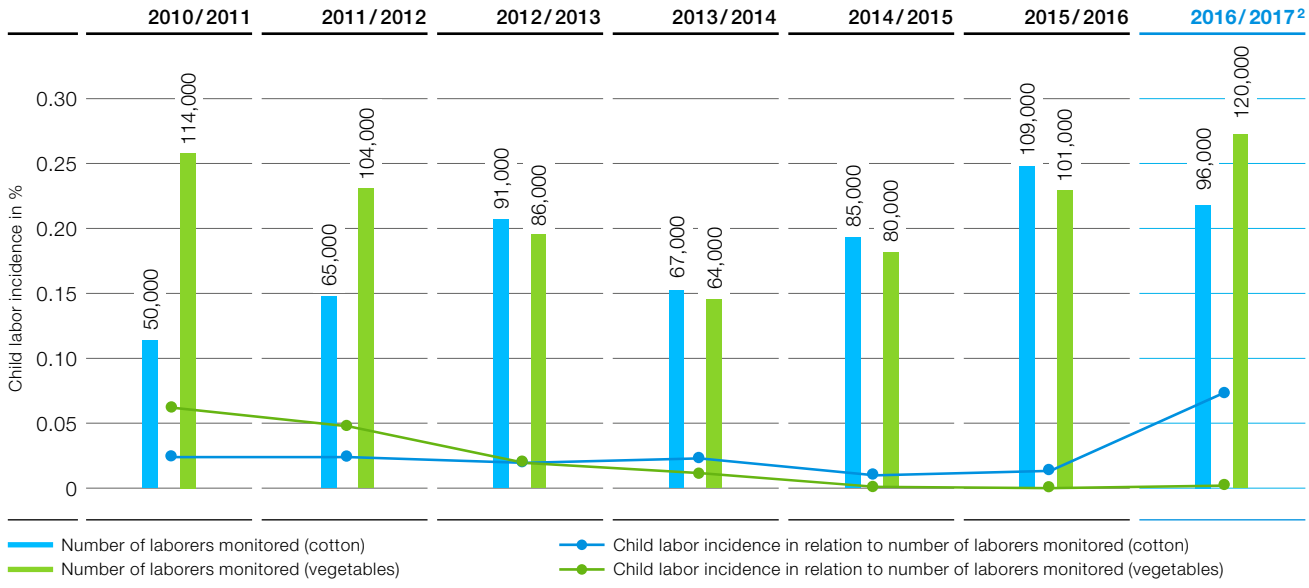
The Child Care Program Advisory Council, comprised of international experts and recognized professionals, supports Bayer in the protection of children's rights and the objective of seed production without child labor. We measure the success of our comprehensive program using the indicator "Child Labor Incidence in Relation to the Total Number of Laborers Monitored in the Production of Cotton and Vegetable Seed for Bayer."

Online Annex: A 1.4.2.1-7

The graph informs about the development of this indicator.

A 1.4.2.1-7/1

Child Labor Incidence in Relation to the Total Number of Laborers Monitored in the Production of Cotton and Vegetable Seed for Bayer[1]



[1] The figures cover several growing cycles per cultivation year. In India the cultivation year runs from the middle of one year to the middle of the next, depending on climatic conditions and the various seed types. Cumulated depiction on the basis of control inspections performed (at least 3 per cultivation season for vegetables and up to 6 per season for cotton)

[2] Child labor incidence cases in 2016 / 2017 were mainly identified among new suppliers in regions of India where Bayer had not previously been active. Through our commitment we are expecting a further reduction in child labor incidence for the coming year. The first figures for the current season 2017 / 2018 confirm this.

1.4.2.2 Production and Logistics

Production

Bayer operates production facilities at more than 130 sites in 34 countries. The safety of our employees, the environment and the areas near our sites is a top priority for us when operating our facilities. We steer these processes through our management systems for the areas of health, safety, environmental protection and quality (HSEQ). Our commitment extends beyond the scope of legal requirements. For capital expenditure projects exceeding €10 million we perform a voluntary ecological assessment. In the case of acquisitions, we examine whether the applicable environmental and occupational safety regulations and fundamental employee rights are complied with at the production sites in question. New production sites may not be set up in areas that are statutorily protected with regard to natural characteristics, biodiversity or other factors.

Bayer worldwide:
see also A 1.1.1/1

See also A 1.4.3.2 and A 1.4.3.3

Online Annex: A 1.4.2.2-1

Few production sites close to protected areas

In a comparison of the geographical coordinates of our production sites against those of internationally recognized protected areas (ASEAN Heritage, Barcelona Convention, UNESCO-MAB Biosphere Reserve, Wetlands and World Heritage Convention and Ramsar Convention), we identified three sites that are within a radius of three kilometers from such areas. These are the Blesbokspruit protected areas in South Africa, Moreton Bay in Australia and Reserva Costa Atlantica de Tierra del Fuego (Atlantic Coast of the “Land of Fire”) in Argentina. None of the sites examined was directly located in any of the named protected areas.

As part of its Group-wide crisis management, Bayer operates a global early warning system – the Bayer Emergency Response System.

Online Annex: A 1.4.2.2-2

A corporate policy provides a globally applicable standard procedure for recording and reporting unusual incidents such as hazards to the safety of our employees, plants or facilities, and regulates the Bayer Group's crisis management. The handling of such incidents is the responsibility of the local crisis organization / emergency response team. For this purpose, organizational precautions with defined responsibilities and procedures have been implemented at the sites / in the countries. Depending on the situation, these involve business partners and the local community around the sites.

We continuously work at our production sites to react more rapidly to market developments through increased flexibility and the expansion of capacities. To achieve this, we invest in our global production network.

Pharmaceuticals and Consumer Health

Both segments operate their own production sites around the world in which active ingredients are manufactured and in which formulation and packaging services are performed for the product portfolio.

Both Pharmaceuticals and Consumer Health continuously invest in their global production networks. Production capacities for the manufacture of hemophilia A products are being established at the Wuppertal and Leverkusen sites in Germany through the currently biggest capital expenditure program of Pharmaceuticals with a total volume of around €800 million. Consumer Health's largest investment project, with a volume of around €50 million in 2017, comprises the multiyear modification and expansion of the production site in Majinpu, China.

A 1.4.2.2/1

Strategic Investments in Property, Plant and Equipment at Pharmaceuticals and Consumer Health

2017	
Pharmaceuticals	Production capacities for rFactor VIII therapies in Wuppertal (Elberfeld) and Leverkusen, Germany
	Expansion of research and development laboratory capacities in Wuppertal, Germany
	Modernization of research facilities in Berlin, Germany
	Modernization of site infrastructure in Wuppertal, Germany
	Modernization of production in Leverkusen, Germany
	Construction of new research building in Wuppertal (Aprath), Germany
	Expansion of production capacities for Eylea™ in Berlin, Germany
Consumer Health	Reconstruction and expansion of production site in Majinpu, China
2016	
Pharmaceuticals	Production capacities for new rFactor VIII therapies in Wuppertal (Elberfeld) and Leverkusen, Germany
	Expansion of research and development laboratory capacities in Wuppertal, Germany
	Modernization of research facilities in Berlin, Germany
	Modernization of site infrastructure in Wuppertal and Leverkusen, Germany
	Expansion of production capacities in Beijing, China
	Expansion of Quality Control Biologics in Berkeley, California, U.S.A.
Consumer Health	Reconstruction and expansion of production site in Majinpu, China

Crop Science

The crop protection products of Crop Science are mainly produced at the segment's own production sites. Numerous decentralized formulation and filling sites enable the company to quickly react to the needs of local markets. At these sites the active ingredients are processed and packaged according to local requirements and application areas. Production of seeds takes place at

locations close to our customers in Europe, Asia and North and South America at our own farms or under contract.

We invested some €2.5 billion overall in property, plant and equipment between 2014 and 2017 to satisfy increased demand for crop protection products and seed. This included investment in the replacement and expansion of production capacities and in research and development facilities. Here the focus was on the United States, Germany and India, and on expanding our network of breeding stations for various crops, particularly to the Netherlands and Brazil.

A 1.4.2.2/2

Strategic Investments in Property, Plant and Equipment at Crop Science

2017
Capacity expansions for herbicides in Muskegon, Michigan, and Mobile, Alabama, U.S.A., and Frankfurt and Knapsack, Germany
Construction of a production facility for insecticides in Dormagen, Germany
Expansion of production capacities for fungicides in Dormagen, Germany
Expansion of research and development facilities in Monheim, Germany
Establishment of breeding stations for various plant species worldwide
Expansion of research and development facilities in Raleigh, North Carolina, U.S.A.
Expansion of production and research greenhouses in Nunhem, Netherlands
Construction of a production facility for fungicides in Kansas City, Missouri, U.S.A.
Expansion of production capacities for insecticides in Vapi, India
2016
Capacity expansions for herbicides in Muskegon, Michigan, and Mobile, Alabama, U.S.A., and Frankfurt and Knapsack, Germany
Construction of a production facility for insecticides in Dormagen, Germany
Expansion of production capacities for fungicides in Dormagen, Germany
Expansion of research and development facilities in Monheim, Germany
Establishment of breeding stations for various plant species worldwide
Expansion of research and development facilities in Raleigh, North Carolina, U.S.A.

Animal Health

We procure the active ingredients for our Animal Health products both from internal sources within Bayer and external suppliers worldwide. Our globally marketed animal health products are mainly manufactured at the sites in Kiel, Germany, and Shawnee, Kansas, United States.

In 2017, we undertook initial capital expenditures totaling some €90 million through 2021 at the Kiel site in connection with a site expansion that will take several years. We manufacture some 60 percent of the Animal Health products we market worldwide in Kiel.

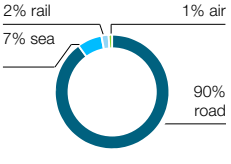
Efficient logistics concept implemented

Logistics at Bayer comprises not just the transport and warehousing of goods, but in fact the entire steering and monitoring of all flows of goods and logistics data for the Bayer Group. We work continuously to develop logistics concepts that account for safety, environmental and cost aspects. Areas of focus in the ecological field include the reduction of CO_2 emissions, for example by minimizing air transport or using logistic concepts that include rail- and waterways.

See also A 1.4.3

A 1.4.2.2/3

Transport Routes



Our logistics organization operates according to management systems and directives with global validity. We use both internal capacities and external logistics partners for storage and transport services. Bayer selects these according to strict safety, environmental and quality criteria. Alongside the Corporate Supply Chain function, each segment maintains its own logistics activities that are aligned toward the unique circumstances of the respective business model and products.

1.4.2.3 Marketing and Distribution

Our marketing and distribution activities are geared toward acquiring new clients and retaining existing customers over the long term.

Depending on market conditions, we supply our customers in the health care sector, in agriculture, in industry and in the private sector through wholesalers, specialist retailers or direct sales organizations. Bayer has established market- and customer-specific distribution channels in accordance with the respective demand.

We systematically analyze our customers' satisfaction with our performance in the individual segments, register their complaints and safeguard our long-term business success by deriving optimization measures from this analysis.

Online Annex: A 1.4.2.3-1

Pharmaceuticals and Consumer Health

Our customer environment in the health care business includes in equal measure patients, consumers, physicians, pharmacists, caretakers, patient organizations, health policy decision-makers and opinion leaders, partners from research and development, and health authorities and health care payers. The distribution channels and the measures we employ to enter into dialogue with these groups are as diverse as these groups are themselves.

The prescription products of Pharmaceuticals are primarily distributed through wholesalers, pharmacies and hospitals. The nonprescription products of Consumer Health are generally sold in pharmacies, with supermarket chains, online specialists and other large retailers also playing a significant role in certain markets such as the United States.

Direct contact between Bayer and the customer environment, and especially patients, is regulated very differently for the Pharmaceuticals and Consumer Health segments. For example, different legal requirements apply for prescription medicines from Pharmaceuticals than for Consumer Health's nonprescription medicines, dietary supplements, medical devices and cosmetics with regard to the collection of customer satisfaction data. The primary market research and data research that must be conducted, including systematic internet analysis, strictly adheres to the legal requirements, which can vary significantly depending on the market.

Crop Science

We offer our crop protection products in more than 120 countries and market them primarily via wholesalers, directly to retailers or, in limited cases, directly to farmers. Our seeds are sold to growers, seedling companies, specialist retailers and the processing industry. We improve plant traits with the help of modern breeding methods and then either license them to other seed companies or incorporate them into proprietary seed varieties.

We market our Environmental Science range of pest and weed control products through wholesalers and specialist retailers to professional users in the green industry, forestry, industrial vegetation management and pest control. We also market our products in the area of public health, mainly through tendering by government agencies and NGOs as with efforts to control malaria and dengue fever, for example.

The requirements of our customers vary according to product, region and culture, and range from rising demands in terms of food safety and quality to trends such as digital farming. Our marketing activities (field marketing) are therefore aligned particularly to the local needs of our customers, whose satisfaction is individually determined by the country organizations using standardized questionnaires.

To strengthen customer centricity along the entire value chain, Crop Science is intensifying its direct cooperation with farmers through initiatives such as Bayer ForwardFarms. On Bayer ForwardFarms, the company cooperates with farmers to demonstrate innovative crop solutions and services for sustainable agriculture to interested stakeholders. Bayer expanded the network of ForwardFarms in 2017 to include Brazil and Argentina. The food chain partnership model successfully developed by Crop Science is also being steadily expanded. Crop Science has initiated over 500 food chain partnership initiatives for 76 crops in more than 40 countries, mainly in Asia, Latin America and Europe. The goal is, together with participants in the food chain such as farmers, the processing industry, exporters and dealers, to develop integrated solutions for sustainable agriculture so as to safeguard and increase yields and to improve the quality of harvested produce. The central element of the initiative is the BayGap program via which Bayer trains producers so that they meet the Global G.A.P. certification standard. Farmers need this in order to be able to access professional markets.

www.forward farming.com

Animal Health

Depending on national regulatory frameworks, we market our animal health products through veterinarians and other distribution channels such as pharmacies or retail stores. Depending on the respective market segment, Animal Health conducts studies on customer satisfaction and customer retention.

Commitment to ethical conduct

In the development, sale and marketing of our products, we do not tolerate bribery or any other form of improper exertion of influence on our business partners. Our minimum standards are derived from laws and other statutory regulations, industry codes and internal rules. Our rules of conduct are established in our Corporate Policy “Responsible Marketing & Sales.” Furthermore, we are committed to ethical advertising and communication for all our products and services.

Compliance: see Glossary

See also A 3.2.1 and A 4.2

As part of our compliance management system, we register and investigate any suspected violation of our responsible marketing principles, irrespective of whether the complaints come from within the company or are notified to us from outside.

Our corporate policy and the respective training programs are implemented decentrally in the segments.

Online Annex: A 1.4.2.3-2

Pharmaceuticals and Consumer Health

The marketing and distribution of pharmaceuticals, medical devices and nonprescription (over-the-counter = OTC) medications are strictly regulated and subject to relevant laws that we are committed to observing. Also applicable at Bayer at the global or regional levels are industry codes adopted by relevant associations of the pharmaceuticals and medical devices industries. In many countries, these standards are further solidified by local codes – all of which apply to prescription pharmaceuticals and many of which also apply to nonprescription medicines, dietary supplements, medical devices and cosmetics.

All codes of the International Federation of Pharmaceutical Manufacturers & Associations (IFPMA) serve as a binding minimum global standard for all prescription human pharmaceutical products marketed by Bayer. In addition, Bayer observes the codes of the European Federation of Pharmaceutical Industries and Associations (EFPIA) for dealings with health care professionals and patient organizations. The WHO’s Ethical Criteria for Medicinal Drug Promotion, together with national ethical standards that are usually also enshrined in industry codes at the local level, represent the minimum global standard for the advertising of human pharmaceutical products at Bayer.

www.bayer.com/efpia

All the aforementioned codes contain provisions governing, among other issues, advertising material standards, the distribution of samples, cooperation with medical and pharmaceutical specialist groups in connection with speaker and consultancy contracts, and scientific studies. Based on the new EFPIA transparency code and the corresponding local interpretations, Pharmaceuticals discloses any grants to health care professionals and organizations annually for the preceding calendar year.

Bayer compliance rules supplement codes

The most important internal Bayer corporate policy in this context is our Anti-Corruption Procedure. The key requirements and the minimum global standard for compliant and ethical conduct are summarized in the Anti-Corruption Compliance Manual, which applies worldwide at Pharmaceuticals and Consumer Health. Principles for ethically and legally acceptable advertising for pharmaceuticals and medical devices are set out in a further Bayer corporate policy. Bayer has also put in place directives and corporate policies to prevent price fixing and ensure data protection. Should several regulations be relevant, Bayer principally applies the more stringent standards.

Training measures on product-related communication, antitrust law, data protection and anti-corruption are fundamental elements of the compliance management system at Bayer. Principles communicated in these training courses provide an overview of globally applicable minimum requirements for cooperation with key stakeholders in the health care industry, such as physicians, hospitals or patient organizations. The anti-corruption courses explain general compliance principles and also give specific instructions in relation to nonreciprocal benefits and the exchange of services with health care professionals.

Crop Science

Crop Science follows the guidelines of its Product Stewardship Policy with regard to the distribution and use of its crop protection products. This policy, which also satisfies the requirements of the Corporate Policy “Responsible Marketing & Sales,” is based on the International Code of Conduct issued by the Food and Agriculture Organization of the United Nations (FAO). We carry out training courses on this topic worldwide.

Animal Health

In the marketing and use of its products, Animal Health not only observes statutory regulations, but also further-reaching Group-wide policies and voluntary industry-wide commitments. Where several regulations are applicable, Animal Health principally observes the more stringent requirements. Most of our companion and farm animal products are subject to the provisions of drug advertising law.

1.4.3 Safety for People and the Environment

Product stewardship goes beyond legal requirements
Occupational health and safety have top priority
Energy efficiency further improved

The quality and safety of our products, the safe and responsible operation of our facilities and the comprehensive protection of our employees and the people who live near our sites are of the utmost importance to us. Bayer also considers environmental protection and the responsible use of natural resources to be extremely important.

Responsibility for health, safety, environmental protection and quality (HSEQ) lies with the member of the Board of Management responsible for Human Resources, Technology and Sustainability. Group-wide HSEQ management systems are in place and incorporated into the business processes. Responsibility for steering and control lies with two corporate functions, "Health, Safety & Sustainability" and "Quality," which stipulate responsibilities and framework conditions, among other means through corporate policies, targets and key performance indicators (KPIs).

Operational responsibility lies with the individual segments, which steer HSEQ with management systems, committees and working groups. All relevant HSEQ performance indicators from our production sites are compiled in a Group-wide Bayer site information system (BaySIS). The continuous review and revision of policies by the corporate functions, regular mandatory internal audits and external certification processes ensure that the systems at all production sites effectively meet the specific requirements in each case.

The excellent performance of our HSEQ management systems also reduces running costs by avoiding damage and disruptions to work and production.

Standards and certifications

Bayer's HSEQ management systems are based on recognized international standards. With regard to coverage based on energy consumption, more than 99% of all our production sites had an HSE management system audited by Bayer in 2017. Our Group-wide certification plan aimed to achieve virtually complete coverage in accordance with external standards in both environmental and occupational safety management by 2017. One hundred percent coverage is not feasible owing to the frequent changes in our site portfolio. 93% of our business activities in 2017 were certified externally to at least one internationally recognized standard for environmental and occupational safety management. Compliance with the statutory requirements and relevant standards is regularly audited by internal experts, regulatory authorities and external consultants.

A 1.4.3/1

Standards and Certifications

% of business activities based on energy consumption	2013	2014	2015	2016	2017
Certification to external standards					
ISO 14001 certification / EMAS validation	67	86	88	92	92
OHSAS 18001 certification	54	72	72	78	91
ISO 50001 [1] certification	–	53	58	70	74
Degree of coverage with certification to at least one of the above standards	78	90	89	93	93
HSE management systems internally audited by Bayer	**100**	**100**	**99**	**96**	**99**

Prior years' figures restated
[1] Group values determined from 2014 onward

Our segments have quality management systems based on sector-specific international standards. Group-wide, coverage with this kind of certification is 75% based on energy consumption.

Online Annex: A 1.4.3-1

The Quality corporate function ensures uniform quality standards across all segments and functions along with the continuous improvement of all quality-related processes. The quality requirements derived from regulatory requirements, permits and authorizations, relevant standards of nongovernmental organizations and industry associations, and customer expectations are regularly reviewed and integrated into an internal quality management system. Compliance with the statutory requirements, relevant standards in production and registered product specifications is regularly audited by internal experts, regulatory authorities and external assessors. These audits also cover institutes sub-contracted by us, service providers and our suppliers.

The quality management system of the Pharmaceuticals and Consumer Health segments forms the basis for the highest possible safety standards in the manufacturing of pharmaceuticals and medical devices, which are subject to strict quality requirements. It is based on internationally recognized standards such as ISO (e.g. ISO 9001, 17025 and 13485) and ICH (International Conference on Harmonization of Technical Requirements for Registration of Pharmaceuticals for Human Use), as well as on rules for good working practice (GxP) in the development and manufacture of pharmaceuticals e.g. Good Manufacturing Practices (GMP), Good Distribution Practices (GDP) and Good Clinical Practices (GCP).

GxP: see Glossary

Our veterinary medicine products also comply with stringent GxP quality standards stipulated in relevant statutory requirements applying to development, approval, manufacture, marketing and safety monitoring. According to this, safety is to be ensured for the animals to be treated, people and the environment alike.

Product manufacture at Crop Science is performed according to ISO 9001. All our products are authorized by the relevant national authorities and thus fulfill the respective requirements with regard to quality and user safety.

1.4.3.1 Product Stewardship

Product stewardship means for us that our products satisfy the highest quality standards and are safe for people, animals and the environment when properly used. All substances and finished products undergo extensive evaluation and testing in the interest of product safety. We assess possible health and environmental risks along the entire value chain and use this to derive appropriate measures to mitigate risks.

We strictly observe the legal requirements, and our voluntary commitment and internal standards go beyond these in many areas.

Implementing statutory requirements

https://echa.europa.eu/regulations/reach

Extensive legal regulations apply to all Bayer products. Chemical substances are subject to the European chemicals regulation REACH (Registration, Evaluation, Authorisation and Restriction of Chemicals) and the CLP (Classification, Labelling and Packaging of Substances and Mixtures) regulation. The registration obligation under REACH applies irrespective of marketing activities for all substances that we produce or import in quantities of more than one metric ton. The classification and labeling of chemicals enables users in the European Union to become informed about the risks associated with chemicals. Bayer assesses all its marketed products and implements the Globally Harmonized System (GHS) of the CLP for the classification and labeling of chemicals worldwide.

The authorities enforce the implementation of REACH through regular inspections. So far, none of the inspections at Bayer has resulted in complaints. We require our suppliers to confirm conformity with REACH for all substances they supply to us.

Online Annex: A 1.4.3.1-1

Alongside the standard registration obligation under REACH there is also an authorization procedure that can lead to the replacement of, or a ban on the use of, particularly hazardous substances. To fulfill the requirements of REACH, we have approved Group-wide and segment-specific policies.

Already registered substances are also regularly evaluated by the authorities. For Bayer substances this can result in additional testing requirements, new risk management measures or inclusion in the REACH authorization procedure. To date, two Bayer substances have been affected, with authorization already being granted for one of these.

Before any of our products is introduced to the market, we first assess the product itself to determine whether it is safe. Furthermore, the end products such as pharmaceuticals, crop protection products and biocides are subject to specific and detailed approval procedures.

Biocides: see Glossary

Voluntary commitment by Bayer

Since 1994, Bayer has supported the voluntary Responsible Care™ initiative of the chemical industry and the associated Responsible Care™ Global Charter. We cover all main elements of the charter at all Group sites with our HSEQ management systems. We are actively involved in the further development of scientific risk assessment through our work in associations and initiatives.

www.icca-chem.org/responsible-care/

Online Annex: A 1.4.3.1-2

Comprehensive support for association activities

International associations such as the European and international chemical industry associations (CEFIC, ICCA) and the OECD, as well as initiatives such as ECETOC (European Centre for Ecotoxicology and Toxicology of Chemicals), work to enhance the scientific assessment of chemicals, develop new test methods and oversee the implementation of statutory regulations. Bayer actively supports these efforts through its activities in the associations. In addition, we are involved, for example, in the ICCA Long-Range Research Initiative and in the WHO and E.U. action plans for improving health and environmental protection. We also support the Strategic Approach to International Chemicals Management (SAICM), which combines chemicals safety activities at the global level under the umbrella of the United Nations Environment Programme with the goal of minimizing negative effects of chemicals on the environment and human health by the year 2020. The approach aims to create the necessary structures, especially in developing countries.

We evaluate our substances' properties already at the research and development stage. We discontinue the development of products with undesirable properties in application of the precautionary principle as defined in Principle 15 of the Rio Declaration of the United Nations and Communication COM (2000) 1 of the European Commission. In our view, the focus here should not be unilaterally on hazard potential, but rather on a balanced benefit-risk assessment.

In Europe, Bayer operates under strict legal requirements. We voluntarily apply comparable standards around the world, independent of the respective national legislation. In this way we are ensuring that substance assessments comparable to those established under REACH will also be applied at all non-European Bayer sites. We support this through our Group target for product stewardship: By 2020, we will have assessed the hazard potential of all substances (> 99%) used in quantities exceeding one metric ton per annum. By the end of 2017, we had assessed 76% of these substances.

Group target 2020: assessment of hazard potential of all substances used in quantities >1 metric ton p.a.; see also A 1.2.1

We carry out risk assessments for chemicals according to recognized scientific methods such as those described in the Guidance on Information Requirements and Chemical Safety Assessment of the ECHA (European Chemicals Agency). Should the analysis reveal that it is not safe to use a certain chemical, we take steps to mitigate risks. The applicable assessment steps and measures are established in a corporate policy. As part of our trusting working relationship with them, we support our customers in the safe handling and use of our products. Bayer compiles safety data sheets for all products regardless of whether or not these are legally required. Appropriate packaging information is provided for all end consumer products, an example being package inserts for pharmaceuticals.

Online Annex: A 1.4.3.1-3

Continuous examination and communication

Risk mitigation measures can range from revised application recommendations to the substitution of a substance. In this case, the use of the substitute must be economically and technically feasible. The substitution of chemicals is basically a continuous task for the chemical and pharmaceutical industry in order to generate new or substantially improved products and processes. This is integral to our commitment to Responsible Care™.

Safety data sheets are the central tools of communication for safety-relevant information about substances and mixtures in the supply chain. Targeting professional users, they contain information on the substance's properties and on its safe use. In addition, technical information is provided for professional use.

In accordance with the respective product safety and information obligations, we compile product information both for raw materials and for intermediates or end products and make these available within the company all over the world, e.g. for product labeling.

Risk assessment of products on the market

Our stewardship also involves the monitoring of all products that are already available on the market. We have established processes throughout the company aimed at addressing inquiries on product safety or problems with our products. This feedback is consistently accounted for in our risk assessment, which also covers substances that are regarded as potentially high-risk by regulatory authorities and independent institutions.

We also assume responsibility for the active ingredients in our products. We conduct environmental risk assessments or implement risk management measures even subsequent to their registration. We also help to tackle questions about active ingredients in the environment and ensure that concerns are addressed through sound risk assessments and analyses. To this end, we have established a balanced risk-benefit assessment process for active ingredients that adequately accounts for customer needs relative to potential or known environmental risks.

Responsible use of biotechnology

Bayer applies biotechnology both in pharmaceutical product development and production, for example of Kogenate™ and Kovaltry™, and in the area of crop protection. Further biotechnologically manufactured active ingredients are undergoing clinical development. In plant biotechnology we use genetic engineering as well as conventional breeding methods to improve crop yields, yield security and the stress tolerance of plants without increasing the input of resources.

For Bayer, safety for people and the environment is a priority in the use of biotechnology. In addition to meeting legal and regulatory requirements, Bayer has specified the responsible use of genetic engineering and strict safety measures in handling biological substances in corresponding corporate policies. We provide our stakeholders with information about our products and services in accordance with our Responsible Marketing & Sales Policy.

Online Annex: A 1.4.3.1-4

Specific procedural instructions regulate the handling of genetic engineering and biological substances in our segments. Crop Science has established the necessary requirements for the responsible use of biotechnology in both the Product Stewardship Policy and the Seeds Stewardship directives. Furthermore, Crop Science maintained its membership in 2017 of the Excellence Through Stewardship (ETS) organization. Audits by ETS-certified auditors are required to maintain ETS membership, and in 2017 Crop Science completed audits in Japan, Australia and India.

Our commitment to preserving biodiversity

In the course of our business activities we aim to use natural resources responsibly and respect biodiversity and the diversity of ecosystems. We have integrated our principles on biodiversity in the Bayer Human Rights Policy and established our own position on this issue. In this, we express our commitment to the United Nations Convention on Biological Diversity and the associated Nagoya Protocol, which regulates the balanced and fair sharing of the benefits arising from the use of genetic resources. Segment-specific measures are applied to implement this.

Online Annex: A 1.4.3.1-5

Crop Science commits itself through an internal policy to ensure that it only acquires and uses genetic resources in harmony with international and national legislation. Biodiversity strengthens the resilience of ecosystems, and thus plays a key role in maintaining and promoting sustainable agriculture. We therefore support agricultural ecosystems by promoting various ecological enhancement measures such as planting flowering strips as a habitat for animals and the more extensive cultivation of slopes to protect against erosion. These measures can help farmers to improve soil fertility and water regulation in their fields or boost the pollination activities of insects and thus increase their yields or biodiversity. We work together with farmers and other experts on solutions and demonstrate at the Bayer ForwardFarms how sustainable agriculture can be implemented in practice.

www.forwardfarming.com

As a member of the Association of Research-Based Pharmaceutical Companies, Bayer supports the association's position on the U.N. Convention on Biological Diversity. An internal position on plant-based medications documents how natural substances can be used with respect to compliance with the Convention on Biological Diversity.

Commitment to animal welfare

Animal studies are legally required and essential from a scientific viewpoint to assess the safety and efficacy of our products. We aim to minimize the use of study animals and to employ alternative methods whenever possible. This includes the phototoxicity test developed by Bayer and others that replaces some animal studies in the investigation of the possible phototoxic effects of drug candidates. We respect all legal requirements pertaining to animal welfare, compliance with which is verified through both regulatory authorities and internal audits. In addition, Bayer's principles on animal welfare and animal studies apply. Bayer's Global Animal Welfare Committee monitors compliance with these guidelines within the Bayer Group and in external studies. Our principles also apply to both the research institutes we commission and our suppliers, whose compliance with our animal welfare requirements we regularly monitor.

www.animalstudies.bayer.com

Online Annex: A 1.4.3.1-6

Commitment to reducing animal studies

Based on the performance indicators of our Animal Welfare Committee, we each year analyze the development of animal numbers, the distribution according to species and the burden placed on our test animals, as well as evaluate studies and discuss possible steps in accordance with the 3Rs principle (replace, reduce, refine). The number of study animals used (including animals in Bayer studies performed by contract research organizations) could be reduced from 96 animals per €1 million research budget in 2005 to around 30 animals in 2017.

3Rs principle: see Glossary

Bayer participates in several internationally renowned consortia and projects that aim to reduce the number of animals used in studies or improve the studies' validity.

Protection against product counterfeiting

Counterfeit medicines and crop protection products harbor substantial risks for patients and consumers. Product counterfeiting can only be addressed internationally through a joint approach by industry, associations, governmental agencies and nongovernmental organizations. Bayer consistently advocates the resolute application and, where necessary, the strengthening and expansion of existing laws and provisions aimed at the identification and confiscation of illegal products. We want to additionally protect customers and products through extensive measures of our own.

Online Annex: A 1.4.3.1-7

Combating counterfeit medications

www.bayer.com/counterfeits

Through the "Beware of Counterfeits" campaign, Bayer informs patients on the internet about the risks of counterfeit pharmaceuticals and provides patients with tips on how they can protect themselves. Through the use of various technological means in production, we constantly strive to ensure that patients, too, can distinguish between original and counterfeit products.

Close cooperation between all stakeholders is necessary to achieve practical success in fighting counterfeiting and prevent the sale of counterfeit pharmaceuticals particularly on the internet. We therefore support the establishment of a Europe-wide system for the identification of original pharmaceuticals that satisfies the requirements of the E.U. Falsified Medicine Directive. In addition, Bayer participates in the Pharmaceutical Industry Initiative to Combat Crime of Interpol to counteract pharmaceutical counterfeiting, in the "Innovation Power for Safety in Industry" initiative and, since 2017, in the LiDaKrA (Integration of Networked Data and Early Detection of Organized Crime Phenomena) research program of the German Federal Ministry of Education and Research, which deals with the automated evaluation of data related to internet crime.

Combating counterfeit and illegal crop science products

To protect against the import of counterfeit and illegal products (crop protection products and seeds) into the E.U., Crop Science intensively advocates the uniform interpretation and implementation of existing E.U. regulations in all member states. We support regulatory authorities worldwide through chemical analysis to identify counterfeit products. In addition, we conduct our own inspections in the market in all countries and actively support initiatives by associations. In 2017, we rolled out our global strategy for combating the production, trade and use of counterfeit or otherwise illegal crop science products. The goal of this strategy is to reduce the risk for people and the environment and to limit the financial damage resulting for Bayer.

As part of our product stewardship programs, we provide information material about the risks of counterfeit and illegal crop science products and train customers, dealers, farmers and regulatory authorities. We document all indications of suspicious and potentially counterfeit or illegal products. We work constantly to counterfeit-proof our products through the use of security features. In 2017, we identified patent and trademark violations in China and Brazil, and successfully asserted our legal rights.

Pharmaceuticals and Consumer Health

Benefit-risk management for pharmaceuticals and medicinal products

The Pharmaceuticals and Consumer Health segments continuously assess the medical benefit-risk profile of their pharmaceuticals, medicinal products, dietary supplements and cosmetics throughout their entire product life cycle. The efficacy, safety and tolerability of pharmaceuticals are investigated in preclinical and Phase I to III clinical development studies. The documentation submitted to the regulatory authorities contains the results of these studies and a comprehensive benefit-risk assessment of the pharmaceutical. It is essential for the market authorization of a new pharmaceutical that it complies with regulatory safety requirements. The same applies to medicinal products, dietary supplements and cosmetics.

According to these regulations, the segments continue to compile safety-relevant information in a dedicated database following market launch of the product. This information is continuously assessed and the benefit-risk balance of pharmaceuticals, medicinal products, dietary supplements and cosmetics regularly evaluated by medical experts of various disciplines in the global Pharmacovigilance Department. In this process, Bayer works closely with the regulatory and supervisory authorities at the international and national levels. Further safety-relevant information is compiled using Post-Authorization Safety Studies (PASS) conducted after approval. The results are entered into the PASS registry in compliance with E.U. pharmacovigilance legislation.

The most important regulatory authorities for Bayer are:
- the U.S. Food and Drug Administration (FDA)
- the European Medicines Agency (EMA)
- the Pharmaceuticals and Medical Devices Agency (PMDA) in Japan
- the China Food and Drug Administration (CFDA)

Pharmacovigilance: see Glossary

Online Annex: A 1.4.3.1-8

Global pharmaceutical monitoring system

The Pharmaceuticals and Consumer Health segments have a global pharmaceutical monitoring system in which experts from various disciplines work together in safety management teams (SMTs). These teams evaluate internal benefit and safety data, clinical trials, post-marketing studies, external databases and scientific publications to identify potential safety concerns at an early stage and detect possible changes in the benefit-risk profile. All data evaluated are entered in our pharmacovigilance database. In particular, the evaluation includes potential side-effects reported to us as a producer and to the health authorities via various communication channels by a range of different sources such as physicians, pharmacists and patients themselves. Producers evaluate the steps resulting from these reports in close cooperation with the relevant health authorities.

Should risks be identified, Bayer immediately takes steps to safeguard the health of patients and consumers in coordination with the authorities. These range from updating product information for patients, users, pharmacists and physicians through patient education brochures and further training measures for medical specialists to direct communication with medical experts (Direct Healthcare Professional Communication, DHPC) and even product withdrawals. All of these processes are documented, regularly updated and integrated into the quality management system.

Implementation of risk mitigation activities is coordinated by our local SMTs in the country organizations. The information on the side-effects of medicines compiled by Bayer is reported to the national health authorities in the relevant countries, where it is processed. The European Union centralized this process in 2017. European marketing authorization holders such as Bayer are now required to enter all suspected cases of undesired side-effects directly in EudraVigilance, the European Medicines Agency's electronic information system. That means that Bayer no longer has to report them separately to the 27 national agencies in the European Union. The EudraVigilance database supplements Bayer's established safety monitoring, further optimizing the safe use of our products.

Analysis of residues of pharmaceuticals in the environment

Active pharmaceutical ingredients can enter the environment through human or animal excreta, through improper disposal or during production. Surface waters are particularly relevant here. For their own active ingredients, Pharmaceuticals and Consumer Health carry out ecotoxicological investigations of pharmaceutical residues and degradation products to assess the potential environmental impact of these products. In connection with the approval process for human and veterinary pharmaceuticals in Europe and the United States, an environmental risk assessment takes place for all new active ingredients. Furthermore, to our knowledge, the existing concentrations of individual active pharmaceutical ingredients in drinking water do not have any relevant adverse effects on human health. On the basis of its report on mixtures of active pharmaceutical ingredients in drinking water published in 2017, the WHO currently does not identify any immediate health risks and consequently sees no need to act in the short term. To further guarantee the safety of drinking water resources partly against the background of a potential increase in the use of pharmaceuticals, the WHO recommends that this issue be observed comprehensively over a longer period of time. Bayer is actively participating in the stakeholder dialogue.

Different requirements regarding wastewater thresholds apply at our production sites. Compliance with these is reviewed by supervisory authorities and external assessors and also at regular intervals through on-site audits by internal experts. To reduce or exclude the release of active ingredients into the environment, we take further action in our production facilities. We are also participating actively in various research projects to develop further reduction measures such as acting as a coordinator in the “Intelligence-led Assessment of Pharmaceuticals in the Environment” project in Europe, which seeks new ways to improve environmental risk assessment.

www.i-pie.org

Online Annex: A 1.4.3.1-9

Bayer is involved in the German government’s stakeholder dialogue on the issue of a trace substance strategy. This dialogue process is aimed at developing a strategy to prevent the water-polluting effects of certain chemicals, including active pharmaceutical ingredients. The first results and recommended measures were summarized in a position paper drafted as a ministerial submission in 2017.

Crop Science

Focusing on product safety

Product safety and environmental compatibility play a key role in the development of crop protection products and technologies to ensure that their use is safe for people and wildlife and does not cause unjustifiable damage to the environment. They therefore require official approval, which is governed by numerous international and national laws and regulations. Crop Science satisfies all the regulatory requirements of the countries in which our products are sold.

In tests required by law, Crop Science already examines the products during the early development phase with regard to their mode of action, their (eco)toxicological properties and the extent of potential residues in plants and the environment. Every new crop protection active ingredient and every new technology must undergo these studies and tests. Furthermore, Bayer has made a voluntary commitment to market only those crop protection products whose active ingredients are registered in at least one OECD country or, in the case of new active ingredients, for which an OECD data package has been compiled.

Since 2017, we have made safety-related data on our crop protection products transparent. More than 200 freely accessible summaries of scientific studies submitted in connection with the registration procedures for our active ingredients in the European Union are already available on an online platform. These documents include information on toxicological and ecotoxicological studies and investigations into degradability. From the start of 2018, noncommercial users will be given access to the full reports on request.

www.cropscience-transparency.bayer.com

In its sale and application of crop protection products and technologies, Crop Science observes the International Code of Conduct on Pesticide Management of the United Nations Food and Agriculture Organization (FAO). The principles of our responsible product handling are established in our Product Stewardship Policy and implemented in the Product Stewardship Program.

The targeted use of crop protection products is crucial to minimize discharge outside of the treated crops. To support the safe use of its products in agricultural practice, Crop Science is particularly committed to protecting users, bee health and surface waters.

Training customers and partners

We support our customers and partners worldwide in the proper and safe handling of our seed and crop protection products. Targeted training measures particularly for farmers and dealers are designed to improve safety for users, the environment and thus consumers as well. Our objective is to increase the outreach of our training activities worldwide.

Users of our products can contact Crop Science through a range of communication channels if they have complaints or feedback or wish to report any incidents. These include direct contact with our sales staff; our standard hotline, which is printed on all our product packaging; and, in Germany for example, the “Agrar Telefon” expert hotline.

Online Annex: A 1.4.3.1-10

Training for farmers and Bayer employees

Our training activities teach farmers how to use crop protection products effectively and safely, and thus increase the yield and quality of their harvested goods. Subsequently, new marketing possibilities can arise that offer smallholder farmers in particular the chance to generate higher profits.

In 2017, more than a million farmers worldwide received safety training from Bayer. The majority of these training activities took place as part of customer events because safety training is an integral part of our business activity. Additional training courses were conducted in cooperation with partners such as local, regional and international associations.

Bayer focuses on training activities in countries where there are no statutory requirements or certification for users regarding the safe handling of crop protection products. With our regional organizations, we therefore establish plans of action for the respective prioritized countries that are then implemented locally.

Our Product Stewardship Policy provides information on the principles for the responsible handling of our products, combined with specific instructions for use for our employees and those who work with our products. Our product stewardship measures also particularly include training activities for our sales representatives.

www.beecare.bayer.com

Bayer Bee Care: strengthening bee health

Healthy bees and other pollinators are important for sustainable food production. Promoting the health of pollinators and sustainable agriculture is therefore of tremendous importance for our business. Within our Bee Care Program, we aim to strike a balance between contributing to the health and biodiversity of pollinators and helping farmers to optimize their agricultural production. We operate two Bee Care Centers in Germany and the United States for this purpose and have established a global Bee Care network. Bayer participates in numerous projects and partnerships with local scientists and research institutions worldwide to strengthen bee health and safety.

Online Annex: A 1.4.3.1-11

Objectives of the Bee Care Program

The health of bees and other pollinators can be impacted and impaired by a number of complex factors that can differ from one region to another. Relevant factors include pests and diseases, the availability of food sources in sufficient quantity and quality, agricultural practices and, in the case of honey bees, the quality of beekeeping practices.

Through our Bee Care Program we reach out and connect with a broad range of stakeholder groups and actively support constructive and open dialogue. Our goal is to jointly seek opportunities for cooperating on health issues concerning bees and other pollinators.

With the Feed a Bee Program in North America we address organizations and individuals to help extend food sources for bees and other pollinators by sowing plant seeds and creating additional flowered areas. Between 2015 and the end of 2017, more than a million individuals and over 120 partner organizations helped to grow in excess of three billion flowering plants by spreading individual Bayer seeds packs.

In Germany, Bayer is conducting a major multiyear study in agricultural landscapes to investigate how ecology-enhancing measures to promote insect biodiversity in agriculture are having an effect. In South America, we support projects studying the attractiveness of various crops to bees so as to better understand the relationship between pollinators and local crops and to optimize the use of crop protection products with regard to their bee safety.

With its Healthy Hives 2020 Program, Bayer conducts important research projects in the United States whose results will benefit beekeeping. Through the equivalent program in Latin America, which is currently being initiated, we want to contribute to improved local honey bee health through research activities such as the monitoring of factors that influence honey bee health and through beekeeper training activities.

In our efforts to find new ways of effectively controlling the Varroa mite, a dangerous parasite for honey bees, the Animal Health segment has developed a new product consisting of a plastic strip treated with an active ingredient that protects beehives from mite infestation. Since 2017, the product has been available to beekeepers in many E.U. countries. The authorization procedure is ongoing for additional countries.

To minimize risks to bees, we perform extensive safety testing, risk assessments, product stewardship measures and the development of bee-friendly crop protection products and processes.

Ongoing re-evaluation of neonicotinoids

Bayer is convinced that neonicotinoids are user-safe insecticides with a favorable environmental safety profile, and are not dangerous to bees when used according to label instructions. This has been confirmed by risk evaluations performed during marketing authorization reviews by the responsible authorities of countries outside Europe. In Europe, however, Bayer products that contain two of our neonicotinoid compounds have been prohibited since 2013 from use in crops that are attractive to bees. The European Commission has instructed the European Food Safety Authority (EFSA) to examine all newly available data and reports from the past four years. The results are expected in spring 2018. Bayer brought the restriction on neonicotinoid use in the E.U. before the Court of Justice of the European Union in August 2013 in order to clarify the legal basis of the Commission's decision. This decision is based on an assessment by the EFSA that in turn is based on neither a validated nor an officially recognized risk assessment system. With a view to future investment decisions, the company is primarily asking that the court clarify the regulatory framework.

Neonicotinoids: see Glossary

Model projects for water protection in agriculture

Crop Science develops strategies and solutions to support the agricultural industry in sustainable water usage.

Online Annex: A 1.4.3.1-12

In the area of water pollution mitigation, we advise our customers and recommend biological remediation systems such as Phytobac™ to them, for example. This system is intended to prevent discharges into water bodies of crop protection active ingredients that are generated during the filling and cleaning of spraying devices or the disposal of residual liquids. The system is being tested in numerous E.U. countries and offered commercially by suppliers. In Europe, more than 4,600 remediation systems are currently installed.

www.bayer.com/phytobac

Erosion and runoff processes on agricultural land can also lead to substance emissions into adjacent water systems. In this context, we are collaborating with external partners on the development of a digital geoinformation system for water protection in agriculture. This enables the visualization of site-related risks by means of high-resolution risk maps supplemented with proposals for proven procedures. This system will be used as an advisory tool for water protection in agricultural operations.

To more effectively account for increasing demands with regard to environmental protection and occupational safety, Crop Science and the company agrotop GmbH have developed the easyflow system. This is a closed, contamination-free discharge system for liquid crop protection products from sealed and unsealed canisters that enables partial and full discharge and cleans itself fully. The system has already been successfully introduced in practice for small plant sprayers used in fruit and vegetable cultivation. A new version for larger sprayers used in farming is currently being introduced to the market.

Animal Health

Safety standards for animal health products

In line with the statutory requirements, strict safety and quality standards also apply to animal health products, animal feed and feed additives. Within the scope of the approval / authorization procedures, Animal Health carries out detailed studies in order to ensure the safety of its products for the treated animals, people and the environment alike.

A particular focus lies on monitoring veterinary pharmaceutical safety and on activities aimed at responsible product use. In line with our Prudent Use Policy, we support the responsible use of antibiotics and promote their proper use, for example through strict guidelines. We also work on the development of alternative strategies to antimicrobial treatment. Since 2015, we have been marketing Zelnate™, a nonantibiotic immunostimulant.

Online Annex: A 1.4.3.1-13

Safety and control system for animal health products

We continuously compile all safety-relevant information such as reports of suspected adverse effects of pharmaceuticals in our global safety database. This information is evaluated and reported to the responsible authorities in accordance with national regulations. In this process, Animal Health works closely with the responsible regulatory and supervisory authorities at the national and supranational levels. This includes especially the European Medicines Agency (EMA) and the national agencies in the European Economic Area, the U.S. Food and Drug Administration (FDA) and Environmental Protection Agency (EPA), and the responsible authorities in other countries.

We work together with veterinarians, pharmacists, farmers and private animal-owners worldwide to promote the correct handling of our products. We participate in the European Platform for the Responsible Use of Medicines in Animals and engage in dialogue with stakeholders from academia, politics and society.

1.4.3.2 Safety

Within the framework of our responsibility for safety, preventing accidents and incidents in day-to-day work, in the operation of production facilities, and on work-related travel and transportation routes where people or the environment may suffer harm or damage has top priority for Bayer. Responsibilities and framework conditions are defined in appropriate directives and corporate policies. The overriding principle is always safety first.

Occupational health and safety

See also A 1.4.1.1

Safeguarding the occupational health and safety of our employees, and of the employees of contractors and suppliers on our company premises and under the supervision of Bayer, is one of our core tasks. This entails preventing work-related accidents and occupational illnesses, assessing potential hazards, ensuring comprehensive risk management and creating a healthy working environment.

Group target 2020: reduction of 35% in occupational safety incident rate (RIR); see also A 1.2.1

The basis of our reporting on occupational injuries is the Recordable Incident Rate (RIR), which covers all injuries to employees requiring medical treatment that goes beyond simple first aid. This includes injuries and occupational illnesses both with and without lost workdays. In 2017, the RIR climbed to 0.45 cases per 200,000 hours worked, corresponding to 493 occupational injuries worldwide. This means that, in statistical terms, one recordable incident occurred for almost every 440,000 hours worked. Reportable injuries with lost workdays comprised 302 of the total of 493 occupational injuries, meaning that the corresponding parameter, the Lost Time Recordable Incident Rate (LTRIR), edged up to 0.28 in 2017.

Online Annex: A 1.4.3.2-1

Occupational illnesses are included in both parameters (LTRIR and RIR), regardless of whether or not they are listed in national registers of occupational diseases. As lists of occupational diseases are not globally standardized and in many countries do not exist at all, we document all occupational illnesses, provided they have been diagnosed and recognized by a physician. Five new cases of occupational illnesses were reported throughout the Bayer Group in 2017. These were related to the musculoskeletal system and noise-induced hearing impairments among other issues.

Bayer universally and regularly subjects all workplaces to a health-related risk assessment and a hazard analysis. These analyses are used to derive measures that, in conjunction with targeted studies, are designed to prevent occupational illnesses. As part of our occupational health and safety policy, we offer our employees regular medical examinations – in some cases on a mandatory basis – in all countries in which this is legally permissible. The focus here is on the risks that exist at each workplace. Furthermore, all respective country-specific provisions for mandatory examinations are complied with.

Fortunately, there were no fatal work-related accidents in 2017.

A 1.4.3.2/1

Recordable Occupational Injuries

	2013	2014	2015	2016	2017
Rate of occupational injuries (RIR[1])	0.49	0.44	0.43	0.40	0.45
Rate of occupational injuries with lost workdays (LTRIR[2])	0.26	0.23	0.21	0.23	0.28
Fatal injuries (total)	2	4	2	4	0
of which Bayer employees	1	3	2	2	0
of which contractor employees[3]	1	1	0	2	0

Prior years' figures restated
[1] RIR = Recordable Incident Rate
[2] LTRIR = Lost Time Recordable Incident Rate
[3] Employees working for third parties whose accidents occurred on our company premises and under Bayer supervision

Bayer AG key data: see also A 1.4.4

Online Annex: A 1.4.3.2-2

A 1.4.3.2-2/1

Recordable Incidents (RIR) by Region

	2013	2014	2015	2016	2017
Europe / Middle East / Africa	0.65	0.54	0.55	0.49	0.54
North America	0.56	0.79	0.67	0.69	0.70
Asia / Pacific	0.21	0.13	0.12	0.14	0.17
Latin America	0.48	0.45	0.49	0.38	0.54
Total	**0.49**	**0.44**	**0.43**	**0.40**	**0.45**

Prior years' figures restated

As in previous years, we hardly recorded any accidents (less than 5%) involving contact with chemicals in 2017. A significant proportion of the accidents and injuries suffered by our employees have behavior-linked causes. Our Behavioral Safety Program is addressing this challenge with suitable training measures. Almost 8,500 employees have been trained at 120 sites worldwide since 2015. Significant behavioral improvements were achieved in areas in which the program has already been implemented, and the Recordable Incident Rate is therefore expected to decline across the Group in the medium term.

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 the community. Bayer is therefore continuously working to further develop the safety culture, the expertise of employees and the globally applicable corporate policies on process and plant safety, which prescribe uniform procedures and standards for identifying risks and defining safety measures, and thus ensure a uniform safety level at all production sites. Compliance with internal and external safety regulations is verified in internal audits by a team of plant safety experts.

Bayer operates a central competence center for process and plant safety in Germany and regional hubs in Asia and North, Central and South America that interlink safety experts from all production sites. In a key move toward further standardization, the central competence center has introduced a globally valid training and certification program for safety experts.

Online Annex: A 1.4.3.2-3

Participation in our TOPPS (Top Performance in Process and Plant Safety) training program is compulsory for all Bayer employees who are able to influence process and plant safety at production and auxiliary facilities, and is documented in the Bayer training system. TOPPS training materials for both classroom and web-based training are available in several languages.

Group target 2020: reduction of 30% in process and plant safety incidents; see also A 1.2.1

A globally standardized key performance indicator (KPI) – Loss of Primary Containment (LoPC material release / leakages) – is used at Bayer as an early indicator for plant safety incidents and is integrated into Group-wide safety reporting. LoPC incidents refer to the leakage of chemical substances or energy in amounts above defined thresholds from their primary containment, such as pipelines, pumps, tanks or drums. The LoPC Incident Rate (LoPC-IR) indicates the number of LoPC incidents per 200,000 work hours. In 2017, the LoPC-IR was 0.13 (2016: 0.17). Bayer's LoPC reporting is based on the requirements of the European Chemical Industry Council (CEFIC), which apply uniformly throughout Europe.

Online Annex: A 1.4.3.2-4

The causes of every reported LoPC incident are analyzed and the incident published across the Group. The reporting threshold was intentionally set at such a low level that even material and energy leaks that have no impact on employees, neighbors or the environment are systematically recorded and reported. This approach supports our commitment to maintain the integrity of our facilities.

Bayer AG key data: see also A 1.4.4

A 1.4.3.2/2

Rate of Plant Safety Incidents (LoPC-IR)

	2013	2014	2015	2016	2017
Loss of Primary Containment Incident Rate (LoPC-IR) [1]	0.16	0.13	0.11	0.17	0.13

Prior years' figures restated
[1] Number of LoPC incidents per 200,000 working hours

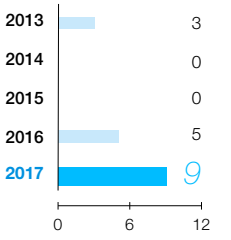
Transportation safety

Transportation safety plays a key role both in the transportation of our products on public routes and in loading, unloading, classification, labeling and packaging, particularly of hazardous goods. The implementation of a dedicated corporate policy ensures that all materials are handled and transported in line with applicable regulations and the potential hazard they pose. As part of our voluntary Responsible Care™ activities, transportation safety instructions are also drawn up for nonhazardous materials and corresponding transportation safety audits performed worldwide. In addition to legally required training courses, we use special electronic training measures to convey specialist knowledge that are also open to service providers. Transportation and storage safety is a part of HSE management and is implemented by a network of experts and users with practical experience who cooperate across divisional and regional lines. Details are specified in the corporate policies "Transportation Safety" and "Health, Safety, Environment and Quality (HSEQ) Audits." Apart from internal Bayer specifications the international regulations of the WHO and/or Crop Life International also apply as standards.

In 2017, data recording on transportation movements was extended to all segments. In total, almost six million consignments were transported in 2017. Despite our extensive safety precautions and training activities, residual risks can result in transport incidents. At Bayer, these include accidents that cause personal injury, and significant damage to property, environmental impact resulting from the release of substances, or leakage of hazardous goods. They are recorded in detail and assessed based on defined criteria. All nine transport incidents in 2017 were traffic accidents. Two of the transport incidents were also classed as environmental incidents.

A 1.4.3.2/3

Number of Transport Incidents



Online Annex: A 1.4.3.2-5

A 1.4.3.2-5/1

Transport Incidents by Means of Transport

	2013	2014	2015	2016	2017
Road	2	0	0	5	9
Rail	0	0	0	0	0
Sea	1	0	0	0	0
Total	**3**	**0**	**0**	**5**	**9**

Prior years' figures restated

The table provides an overview of the transport and environmental incidents in 2017.

A 1.4.3.2-5/2

Transport and Environmental Incidents 2017 [1]

	Transport	Environmental	Personal injury
Crop Science, Hofu, Japan, February 6, 2017 On an icy road, a truck collided with several other vehicles. No product leaked out.	X		No
Crop Science, Monheim, Germany, February 13, 2017 While transporting a Bayer product, a truck left the road and the driver suffered a slight injury. No product leaked out.	X		Yes
Crop Science, Belford Roxo, Brazil, February 18, 2017 An accident occurred in which a truck transporting a Bayer product was hit by a gas truck. All the vehicles involved caught fire. The product released was cleaned up and disposed of in a professional manner.	X		No
Crop Science, Mereville, France, August 23, 2017 A truck caught fire during transportation. The product contained in the trailer leaked out but could be cleaned up and disposed of in a professional manner. There was no environmental impact.	X		No
Crop Science, Belford Roxo, Brazil, September 16, 2017 During transportation a truck lost part of its load. The product was cleaned up and disposed of in a professional manner.	X		No
Crop Science, Belford Roxo, Brazil, November 6, 2017 A truck collided front-on with a car trying to overtake. The car driver died. The truck driver was not injured. The majority of the liquid Bayer load was pumped off, some of it burnt off and the rest of the product was cleaned up and disposed of in a professional manner.	X	X	Yes
Crop Science, Yuki, Japan, November 14, 2017 During transportation on Bayer premises, an intermediate bulk container (IBC) that had been wrongly secured by the disposal company and was filled with wastewater from Bayer was torn open and the contents leaked out. Most of the wastewater could be cleaned up and disposed of in a professional manner.	X		No

A 1.4.3.2-5/2 (continued)

Transport and Environmental Incidents 2017 [1]

	Transport	Environ-mental	Personal injury
Crop Science, Belford Roxo, Brazil, November 17, 2017 The driver of a truck lost control over the vehicle, which then caught fire. Part of the load burnt off while the remaining product entered the soil. The contaminated soil was ablated and disposed of in a professional manner.	X	X	No
Crop Science, Belford Roxo, Brazil, December 7, 2017 The driver of a truck lost control over the vehicle. Product leaked out, most of which was cleaned up and disposed of in a professional manner. There was no environmental impact.	X		No

[1] Standard practice at Bayer is to record all personal injuries (also of third persons) reported to us in connection with our business activities. A difference between the number of fatalities in Table A 1.4.3.2/1 and Table A 1.4.3.2-5/2 may occur because for occupational injuries, by definition, we show only fatalities of Bayer and contractor employees who were under immediate Bayer supervision.

1.4.3.3 Environmental Protection

We meet our responsibility to protect the environment in many different ways. We continuously work to reduce the environmental impact of our business activities and develop product solutions that benefit the environment. As a pure life science company too, Bayer continues to be actively committed to climate protection.

For us, a resource-friendly and low-emissions approach to raw materials and energy is ecologically and economically expedient and efficient. These measures are designed to reduce environmental impact and, at the same time, cut the costs associated with materials, energy, emissions and disposal.

Responsibilities and framework conditions are stipulated at Group level, e.g. by corporate policies, targets and key performance indicators (KPIs). We use certified HSEQ management systems to control operational implementation. Our environmental standards apply worldwide.

Energy consumption

As a consequence of the deconsolidation of Covestro, we now present two sets of data on energy consumption at Bayer: with and excluding our service company Currenta. Currenta operates its own combined heat and power plants at the Chempark sites in Germany and sells the electricity and steam generated there primarily to other companies with energy-intensive production processes (including Covestro). This split allows transparent presentation of energy use in the Bayer Group.

Total energy consumption falls compared with 2016

Compared with 2016, Bayer's total energy consumption declined by 1.6% to 25.8 petajoules in 2017. When calculating total energy consumption, we differentiate between primary and secondary energy consumption. Primary energy consumption mainly comprises fossil fuels for our own generation of electricity and steam. Secondary energy consumption reflects the purchase of electricity, steam and cooling energy.

Excluding Currenta, Bayer's total energy consumption fell in 2017 by 4.1% to 15.4 petajoules. Primary energy consumption at Bayer excluding Currenta fell by 15.1%, while secondary energy consumption increased by 10.2%. This reflects the divestment of the chemical park infrastructure, including the power plant, at the Crop Science site in Institute, West Virginia, United States, which reduced primary energy consumption. At the same time, site-specific secondary energy consumption increased.

A 1.4.3.3/1

Energy Consumption in the Bayer Group

TJ	2013	2014	2015	2016	2017
Primary energy consumption at Bayer excluding Currenta	11,647	10,555	11,347	9,028	7,661
Natural gas	7,410	7,587	7,822	6,590	6,447
Coal	2,616	2,092	2,535	1,400	285
Liquid fuels	202	202	165	253	175
Waste	1,142	455	571	556	539
Other [1]	277	219	254	229	215
Secondary energy consumption at Bayer excluding Currenta	5,628	5,467	5,991	7,022	7,739
Electricity [2]	4,009	4,028	4,323	4,064	4,075
Steam	540	498	657	2,008	2,547
Steam from waste heat (process heat)	256	77	176	72	70
Cooling energy	823	864	835	878	1,047
Total energy consumption at Bayer excluding Currenta	**17,275**	**16,022**	**17,338**	**16,050**	**15,400**
Total energy consumption at Currenta	**10,697**	**10,266**	**7,339**	**10,193**	**10,432**
Total energy consumption in the Bayer Group	**27,972**	**26,288**	**24,677**	**26,243**	**25,832**

Prior years' figures restated
[1] E.g. hydrogen
[2] The proportion of primary energy sources used in generating the electricity consumed depends on the respective national electricity mix.

Bayer AG key data: see also A 1.4.4

Since it operates power plants, Currenta uses primary energy resources. The steam and electricity generated are mainly supplied to companies with energy-intensive production operations with which it has supply agreements. Demand from these companies is exposed to fluctuations that are beyond the influence of Currenta as an energy service provider. This explains the variations in Currenta's total energy consumption (2017: 10.4 petajoules, an increase of 2.3%).

Energy efficiency improved further

With effect from 2017, Bayer indicates energy efficiency as the relationship between the energy it uses and its external sales, instead of the manufactured sales volume applied previously. Following the deconsolidation of Covestro, this is a more appropriate reference value for our product portfolio.

Our Group target for 2020 is to improve the energy efficiency of Bayer excluding Currenta by 10% relative to 2015. Bayer's external sales excluding Currenta fell by 0.3% in 2017, while energy consumption decreased by 4.1%. As a result, our energy efficiency improved by around 3.8% compared with the previous year. Compared with 2015, energy efficiency has improved by 12.6% overall.

Group target 2020: improvement of 10% in energy efficiency; see also A 1.2.1

A 1.4.3.3/2

Energy Efficiency

kWh / €1,000 external sales	2013	2014	2015	2016	2017
Energy efficiency of Bayer excluding Currenta	170.75	154.01	143.46	130.35	125.39
Energy efficiency of the Bayer Group	268.68	245.97	199.60	208.62	204.93

Prior years' figures restated

Combined heat and power processes account for high proportion of in-house energy generation

More than 90% of our own energy generation comes from highly efficient combined heat and power processes that convert approximately 80% of the fuel energy used into electricity and heat. In addition, we purchase electricity on the market – through energy exchanges, for example. The electricity and heat generated and purchased are used in our own production facilities and third-party facilities. The proportion of renewable energies is determined by the energy mix of our energy suppliers. We comment in detail on these issues in our CDP (formerly Carbon Disclosure Project) Report.

CDP: see Glossary

www.bayer.com/CDP-Climate

Air emissions

Climate protection

At Bayer, air emissions are caused mainly by the generation and consumption of electricity, steam and process heat. As part of our Bayer Climate Program we have been able to continuously improve our energy efficiency, primarily by focusing on production and process innovations and introducing energy management systems. Despite significantly expanding production (Bayer including Covestro's energy-intensive production facilities), we reduced our absolute greenhouse gas emissions significantly between 1990 and 2015, namely by around 30%. We have documented our successes in the CDP reports and in 2017 were again awarded leadership status, thus reaffirming the top rating of the previous years.

As a pure life science company too, we want to continue making positive contributions to protecting the climate and managing the effects of climate change on several levels. This includes reducing our production-related emissions with targets relating to improving energy efficiency and lowering specific greenhouse gas (GHG) emissions. In the future, we plan to focus more on reducing emissions in nonproduction areas. These include our vehicle fleet (Sustainable Fleet initiative), investigating the use of electric vehicles (electric mobility programs), optimizing logistics and further developing our information and communication technologies in terms of environmental aspects (Green IT). In addition, we are investigating further potential ways to lower greenhouse gas emissions along the value chain, such as the question of whether state-of-the-art cultivation methods and innovative solutions for precision agriculture contribute to a lower CO_2 footprint in agriculture.

Online Annex: A 1.4.3.3-1

We are also working further to reduce our CO_2 emissions in connection with our global fleet of over 25,000 vehicles. For the just over 4,200 vehicles newly registered worldwide in 2017, these rose to 157 g/km (2016: 145 g/km). Our goal as part of our Sustainable Fleet Initiative is to reduce average CO_2 emissions to 110 g/km for new vehicles registered in 2020. In 2018, we shall reinforce our pilot projects on electric mobility, for example.

Transparency on greenhouse gas emissions

GHG Protocol: see Glossary

Bayer reports all Group greenhouse gas emissions in line with the requirements of the Greenhouse Gas (GHG) Protocol. Direct emissions from our own power plants, waste incineration plants and production facilities (Scope 1) and indirect emissions from the procurement of electricity, steam and cooling energy (Scope 2) are determined at all production locations and relevant research and administrative sites.

Bayer reports in line with the updated GHG Protocol guideline for Scope 2, which states that indirect emissions must be reported according to both the location-based and the market-based methods.

A 1.4.3.3/3

Greenhouse Gas Emissions of the Bayer Group

Million metric tons of CO_2 equivalents	2013	2014	2015	2016	2017
Direct emissions [1]	3.16	2.95	3.16	2.97	2.50
Bayer excluding Currenta	0.73	0.69	0.91	0.73	0.61
Indirect emissions [2] according to the location-based method	1.65	0.97	1.86	1.53	1.28
Bayer excluding Currenta	0.76	0.58	0.97	0.88	1.05
Indirect emissions [2] according to the market-based method	1.25	1.11	1.46	1.67	1.13
Bayer excluding Currenta	0.74	0.66	0.96	0.93	0.97
Total greenhouse gas emissions according to the market-based method [3]	**4.40**	**4.06**	**4.62**	**4.64**	**3.63**
Bayer excluding Currenta	1.47	1.35	1.87	1.66	1.58
Specific greenhouse gas emissions of Bayer excluding Currenta ($kg\ CO_2e$/€1,000 external sales), market-based method [3,4]	52.18	46.84	55.70	48.45	46.26

Prior years' figures restated

[1] In 2017, 94.86% of emissions were CO_2 emissions, 3.69% N_2O emissions, just under 0.64% partially fluorinated hydrocarbons and 0.08% methane.

[2] Typically, CO_2 in incineration processes accounts for over 99% of all greenhouse gas emissions. When determining indirect emissions, our calculations are therefore limited to CO_2 and indicate direct emissions in CO_2 equivalents.

[3] The market-based method of the Scope 2 GHG Protocol most reliably reflects the indirect emissions and the success of emissions reduction measures, so we used emissions volumes calculated using this method when calculating the total and specific greenhouse gas emissions.

[4] Specific Group emissions are calculated from the total volume of direct emissions, indirect emissions calculated using the market-based method of the Scope 2 GHG Protocol and emissions from the vehicle fleet, divided by the external sales volume. Quantities attributable to the supply of energy to external companies are deducted from the direct and indirect emissions.

Bayer AG key data: see also A 1.4.4

In line with the GHG Protocol, in our energy balance we include all greenhouse gas (GHG) emissions from the conversion of primary energy sources into electricity, steam or cooling energy. This also applies to emissions of our service company Currenta, which additionally produces energy for other companies at the German Chempark sites in Leverkusen, Krefeld-Uerdingen and Dormagen that account for a significant proportion of our direct emissions. Consequently, the figures for the greenhouse gas emissions in the Bayer Group are substantially higher than the actual emissions resulting from the business activities of Bayer excluding Currenta alone.

In 2017, the Group recorded a reduction of 21.8% in total GHG emissions. GHG emissions of Bayer excluding Currenta fell by 4.8%.

Direct emissions diminished across the Group by 15.8%, mainly due to the overhaul of a coal-fired boiler at the Uerdingen site in Germany and the sale of the chemical park infrastructure at the Crop Science site (including the attached power station) in Institute, West Virginia, United States. Indirect emissions (market-based method) fell by 32.4%.

As with the calculation method for our energy efficiency, we changed our reporting of specific greenhouse gas emissions in 2017. We indicate them as the relationship between GHG emissions at Bayer excluding Currenta and our corresponding external sales. We are looking to achieve a 20% reduction in specific greenhouse gas emissions by 2020 compared with 2015.

Group target 2020: reduction of 20% in specific greenhouse gas emissions; see also A 1.2.1

Specific GHG emissions of Bayer excluding Currenta fell by 4.5% in 2017 compared with the previous year.

The reporting of all relevant indirect emissions from the value chain is bindingly regulated by the GHG Protocol Corporate Value Chain (Scope 3) Accounting & Reporting Standard. Bayer has identified eight essential Scope 3 categories, which we report on in detail in the CDP Report.

www.bayer.com/CDP-Climate

In 2017, the Bayer Group was involved in European emissions trading with 11 plants in total. The CO_2 emissions of these plants amounted to approximately 1.85 million metric tons.

Reduction in other direct air emissions

Emissions of ozone-depleting substances (ODS) fell by 3.1% in 2017, while emissions of volatile organic compounds (VOCs) excluding methane dropped by 5.0%. This is mainly due to the sale of a site in France and the waste air treatment measures we have introduced in Vapi, India.

Online Annex: A 1.4.3.3-2

The main source of both types of emissions is the Crop Science site in Vapi, India, which accounts for 97.4% of ODS emissions and 67.9% of VOC emissions at Bayer. To significantly reduce these emissions, Bayer launched a project at this site five years ago with the goal of bringing together the many different sources of emissions at the site in a central waste air treatment facility. The last subproject is to be implemented in 2018.

Other air emissions in the Group were positively influenced by an overhaul of a power plant at the Krefeld-Uerdingen site in Germany. Sulfur dioxide emissions fell by 4.4%, particulate emissions by 8.0% and carbon monoxide emissions by 7.5%.

A 1.4.3.3-2/1

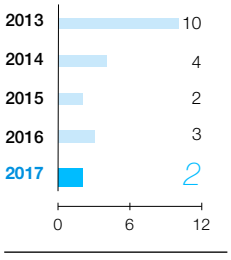
Other Direct Air Emissions

1,000 metric tons	2013	2014	2015	2016	2017
ODS [1]	0.0149	0.0142	0.0113	0.0088	0.0086
VOC [2]	2.08	1.84	1.38	0.92	0.87
CO	0.62	0.57	0.60	0.66	0.61
NO_x	1.68	1.53	1.60	1.50	1.52
SO_x	1.26	1.16	1.13	0.96	0.92
Particulates	0.07	0.06	0.06	0.06	0.06

Prior years' figures restated
[1] Ozone-depleting substances (ODS) in CFC-11 equivalents
[2] Volatile organic compounds (VOC) excluding methane

A 1.4.3.3/4

Number of Environmental Incidents



Lower number of environmental incidents

The number of environmental incidents – i.e. incidents that result in the release of substances into the environment – decreased from three to two in 2017. There was a personal injury in one of these incidents. Factors that determine whether there is a reporting obligation include, in particular, the nature and quantity of the substance, the amount of damage caused and any consequences for nearby residents. In accordance with our internal voluntary commitment, we report any leakage of substances with a high hazard potential from a quantity of 100 kg upward.

Both environmental incidents were transport incidents. Details of the environmental and transport incidents in 2017 can be found in the section on transport incidents in Online Annex A 1.4.3.2-5.

Use of water and emissions into water

Clean water in sufficient quantities is essential for the health of people, animals and plants. Therefore it is essential that industrial water usage does not lead to local problems in the future such as a shortage of water for the people living in the area. Our Water Position commits us to compliance with international and local legislation to protect water resources and use them efficiently. We are currently finalizing our Water Stewardship Strategy, in which we are combining and further developing our activities in this area.

In line with our Group target between 2013 and 2017, we introduced a water management system at all Bayer sites in water-scarce areas or areas identified as being threatened by water scarcity by the WBCSD Global Water Tool™. Using a method developed by Bayer, we analyzed the yearly site data pertaining to water use, quality and source, and used this information to develop site-specific measures to introduce and improve water management.

Group target 2017: establishment of water management at all sites in water-scarce areas; see also A 1.2.1

Bayer supports the CEO Water Mandate of the U.N. Global Compact with the goal of working with key stakeholders to develop sustainable approaches for water usage. In our annual response to the CDP Water Disclosure, we report in detail on our water usage and the company-specific water footprint. This represents a progress report for the CEO Water Mandate.

CDP: see Glossary

www.bayer.com/CDP-Water

Water use

In 2017, total water use in the Group was 98 million cubic meters (2016: 93 million cubic meters). Some 50% of all water used by Bayer is cooling water that is only heated in this process and does not come into contact with products. It can be returned to the water cycle without further treatment in line with the relevant official permits.

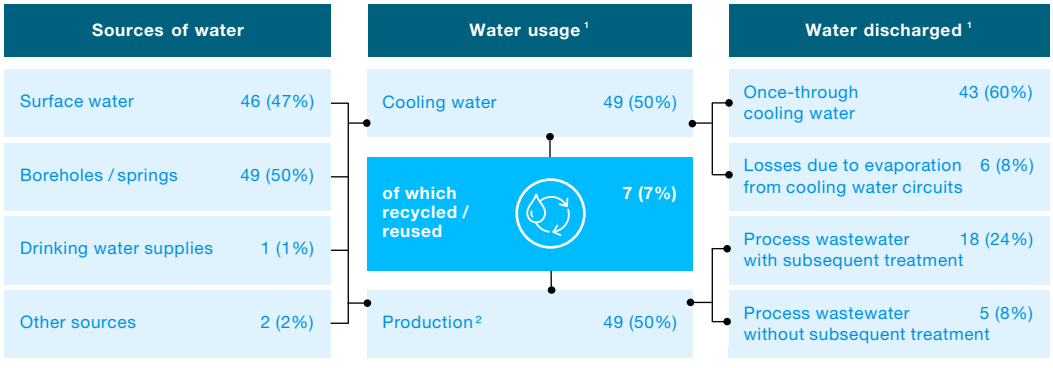
Bayer AG key data: see also A 1.4.4

At our production facilities, we endeavor to use water several times and to recycle it. Water is currently recycled at 17 sites, accounting for 48% of the total water used. The various forms of recycling include closed cooling cycles, reuse of treated wastewater and recirculation of steam condensates as process water. A total of around 6.9 million cubic meters of water was reused in 2017.

Online Annex: A 1.4.3.3-3

A 1.4.3.3-3/1

Water Use in the Bayer Group in 2017 (million m³)



[1] The differences between volumes of water consumed and water discharged can be explained, for example, by unquantified losses due to evaporation, leaks, quantities of water used as raw materials in products and volumes of condensate generated through the use of steam as a source of energy.
[2] Sum from production processes, sanitary wastewater and rinsing and cleaning processes in production

The volumes of water from each source have remained within the usual fluctuation range over the past five years.

Online Annex: A 1.4.3.3-4

A 1.4.3.3-4/1

Net Water Intake by Source

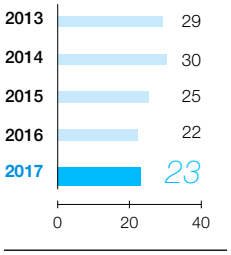
Million m³	2013	2014	2015	2016	2017
Water consumption	117	104	110	93	98
of which from surface water	64	58	59	43	46
of which from boreholes / springs	50	43	48	47	49
of which from public drinking water supplies	1	1	1	1	1
of which from other sources, e.g. rainwater	2	2	2	2	2

Prior years' figures restated

Wastewater

A 1.4.3.3/5

Process Wastewater Volume
Million m³



The total quantity of wastewater, including process and sanitary wastewater, was 23 million cubic meters in 2017, which is 5.1% up on 2016. All wastewater is subject to strict controls before it is discharged into the various disposal channels. 75.9% of Bayer's wastewater worldwide was purified in wastewater treatment plants (Bayer or third-party facilities). Following careful analysis, the remaining volume was categorized as environmentally safe according to official provisions and returned to the natural water cycle.

We aim to minimize our emissions into wastewater. In 2017, most of our water emissions fell. At the Dormagen site in Germany, however, discharges of nitrogen rose by 32% owing to a change in the production portfolio. In 2017, we also applied alternative means of disposing of product-containing wastewater such as incineration, distillation or chemical treatment.

A 1.4.3.3/6

Emissions into Water

1,000 metric tons	2013	2014	2015	2016	2017
Phosphorus	0.08	0.06	0.06	0.05	0.04
Nitrogen	0.40	0.48	0.38	0.30	0.40
TOC [1]	0.91	0.58	0.54	0.54	0.39
Heavy metals	0.0043	0.0028	0.0021	0.0021	0.0019
Inorganic salts	233	178	202	184	188
COD [2]	2.73	1.74	1.63	1.62	1.17

Prior years' figures restated
[1] Total organic carbon
[2] Chemical oxygen demand; calculated value based on TOC figures (TOC x 3 = COD)

Waste and recycling

Systematic waste management minimizes material consumption and disposal volumes. Safe disposal channels with separation according to the type of waste and economically expedient recycling processes serve this purpose. Production fluctuations and building refurbishment / land remediation work also influence waste volumes and recycling paths. In accordance with Bayer's corporate policies, all production sites are obliged to prevent, recycle and reduce waste and dispose of it safely and in line with good environmental practices.

Higher volumes of waste

In 2017, the total volume of waste generated rose by 9.9%. Owing to various construction activities at the site in Wuppertal, Germany, the volume of nonhazardous waste increased by 5.5%. The volume of hazardous waste rose by 13.3%, primarily due to demolition work at the Belford Roxo site in Brazil. The volume of hazardous waste from production rose by around 5.7%, mainly due to changes in the production portfolio at the Dormagen site in Germany.

A 1.4.3.3/7

Waste Generated[1]

1,000 metric tons	2013	2014	2015	2016	2017
Total waste generated	729	718	759	770	846
Hazardous waste[2]	363	377	431	428	485
of which hazardous waste from production[2]	316	335	381	394	417

Prior years' figures restated
[1] Waste generated by Bayer only
[2] Definition of hazardous waste in accordance with the local laws in each instance

Bayer AG key data: see also A 1.4.4

The volume of waste disposed of rose by 9.3% in total. The volume proportions for the three main types of disposal (landfill, incineration and recycling) have remained similar over the past five years. 25% of waste disposed of could be recycled.

Online Annex: A 1.4.3.3-5

A 1.4.3.3-5/1

Waste by Means of Disposal

1,000 metric tons	2013	2014	2015	2016	2017
Total volume of waste disposed of[1]	**744**	**720**	**768**	**769**	**840**
Volume removed to landfill	255	216	228	247	314
Volume incinerated	267	274	272	227	210
Volume recycled[2]	210	216	241	228	214
Others[3]	12	14	27	67	102
Total volume of hazardous waste disposed of[4]	**363**	**377**	**431**	**428**	**485**
Volume removed to landfill	51	63	73	63	99
Volume incinerated / recycled	312	314	358	365	386

Prior years' figures restated
[1] Waste can also be stored at sites as an intermediate step. For that reason, the volume of waste disposed of differs slightly from the volume of waste generated by Bayer.
[2] Recycling refers to processes through which waste is reused or treated for reutilization.
[3] E.g. passed on to third parties (e.g. providers / waste disposal companies)
[4] Waste generated by Bayer only; definition of hazardous waste in accordance with the local laws in each instance

Our service company Currenta serves as a certified waste disposal plant operator at the Chempark sites in Germany. At these locations, Bayer disposes not only of its own waste, but also of waste from third parties (companies not belonging to the Bayer Group). In 2017, the waste incineration plants operated by Currenta generated almost 800,000 metric tons of steam from the incineration of more than 210,000 metric tons of waste from the Chempark sites and some external production companies.

Recycling

Recycling and processing / treatment is impossible for a large proportion of our materials, especially pharmaceuticals and crop protection products. Throughout the Group, we make use of opportunities for recycling within the framework of legal regulations.

Online Annex: A 1.4.3.3-6

Pharmaceuticals, Consumer Health and Animal Health

Production-related recycling takes place in line with the requirements of the relevant production site. The disposal of pharmaceutical products is subject to strict safety criteria, so no recycling is possible for the portfolios of these segments. Packaging materials are recycled in line with national regulations as part of the country-specific infrastructure for waste disposal.

Crop Science

Material-based recycling is important in Crop Science's active ingredient and intermediate product manufacture and is regulated individually at each production site. Solvents, catalysts and intermediates are repeatedly processed and returned to the production process. In the global process development of active ingredients and intermediates, material recycling is considered an important development criterion.

Packaging materials are disposed of or recycled in line with national legislation. In many countries with no legal regulation, the industry has set up a returns system in collaboration with other providers.

Returns of obsolete stocks of crop protection products are limited to individual cases. The crop protection product industry has set up voluntary initiatives in various countries for the proper disposal of obsolete stocks. In addition, as part of its activities in the CropLife association, Crop Science is working with the Food and Agriculture Organization of the United Nations (FAO) and the World Bank to support the proper collection and disposal of obsolete stocks in Africa.

1.4.4 Nonfinancial and Other Disclosures by Bayer AG

The importance of Bayer AG within the Group has increased as a result of the business lease agreements described in A 1.1.2. Further disclosures are necessary due to the transfer of the operational business of Bayer Pharma AG and Bayer CropScience AG in Germany to Bayer AG and the related increase in the number of employees to 17,072 (2016: 2,322). This pertains especially to reporting on significant nonfinancial information, which also became mandatory for the parent company Bayer AG as a result of the CSR Directive Implementation Act that went into effect in 2017.

The integrated presentation was selected in the management report for the nonfinancial statement to be issued for the first time in 2017 pursuant to Section 289 b 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. Further information on the business performance and the situation of the company is found in A 2.3 “Earnings; Asset and Financial Position of Bayer AG.”

A 1.4.4/1

Nonfinancial and Other Key Data of Bayer AG

	2017
R&D expenses (€ million)	2,186
Employees [1]	17,072
Employees by function [1]	
Production	8,858
Marketing and distribution	936
R&D	5,468
General administration	1,810
Employees by gender [1]	
Women	6,104
Men	10,968
Personnel expenses (€ million)	2,045
Pension obligations (€ million)	4,251
Short-term incentive program (€ million)	194
Procurement spend (€ billion)	3.9
Safety	
Recordable Incident Rate (RIR)	0.52
Lost Time Recordable Incident Rate (LTRIR)	0.34
Loss of Primary Containment Incident Rate (LoPC-IR)	0.21
Environmental protection	
Total energy consumption (terajoules)	7,878
Total greenhouse gas emissions (million metric tons of CO_2 equivalents)	0.69
Water use (million cubic meters)	4.74
Total waste generated (1,000 metric tons)	302

[1] Full-time equivalents (FTEs)

2. Report on Economic Position

2.1 Overview of Business Performance

2.1.1 Target Attainment 2017

↗ 2017 Group targets: Growth and Profitability; see also A 1.2.1

A 2.1.1/1

Target Attainment 2017

	Forecast 2017 incl. Covestro[1]	Transition to new forecast 2017 excl. Covestro[2]	Target attainment
Group sales	Low- to mid-single-digit percentage increase[3]	Low-single-digit percentage increase[3]	1.5% increase[3]
	More than €49 billion	€35 – 36 billion	€35 billion
EBITDA before special items	Mid-single-digit percentage increase	Slightly above the level of the previous year	Level with previous year
Core earnings per share	Mid-single-digit percentage increase	Low-single-digit percentage decrease	1.0% increase

[1] Issued in February 2017 [2] Issued in October 2017 [3] Currency- and portfolio-adjusted

2.1.2 Economic Position of the Bayer Group

In 2017, the Bayer Group's operational business was at the prior-year level. Sales increased by 1.5% on a currency- and portfolio-adjusted basis, while EBITDA before special items came in at the prior-year level despite negative currency effects. Pharmaceuticals once again posted sales and earnings increases that resulted primarily from the strong development of our key growth products Xarelto™, Eylea™, Xofigo™, Stivarga™ and Adempas™. Our Consumer Health business registered declining sales and earnings development, predominantly as a result of weak business development in the United States. At Crop Science, currency- and portfolio-adjusted sales and EBITDA before special items were down year on year. This development was attributable to an adjustment of inventories in the distribution channel in Brazil. Animal Health posted an increase in sales and significant growth in EBITDA before special items. Core earnings per share of the Bayer Group increased by 1.0% to €6.74. We met our adjusted Group forecast for the full year for sales. EBITDA before special items came in slightly below our expectations, while core earnings per share exceeded our expectations.

2.1.3 Key Events

We made significant progress in 2017 with our strategic objectives. We considerably reduced our interest in Covestro AG from 64.2% as of December 31, 2016, to 24.6% a year later, generating proceeds of some €4.7 billion. We placed a further 4% of Covestro AG shares into Bayer Pension Trust e.V., which held an 8.9% interest as of December 31, 2017. As a result of the reduction in the shares held and the conclusion of a control termination agreement with Covestro AG, Bayer ceded de facto control over Covestro AG in the third quarter of 2017. Following deconsolidation as of September 30, 2017, the Covestro Group was presented as an associate for the first time. Continuing operations are now comprised exclusively of the life science businesses.

In January 2018, we divested a further 10.4% of Covestro shares, bringing our current direct interest in that company to 14.2%. It remains Bayer's intention to achieve full separation from Covestro.

In connection with the planned acquisition of Monsanto and the related customary closing conditions, including approval by the relevant antitrust and other authorities, Bayer in 2017 received half of the regulatory approvals it had applied for. We are cooperating with the authorities in the ongoing procedures, including in the United States and Europe, as we look to close the transaction in the second quarter of 2018.

In October 2017, furthermore, we signed an agreement concerning the sale of certain Crop Science businesses to BASF SE. The transaction is subject to an approval process by the regulatory authorities and is contingent upon the successful closing of Bayer's acquisition of Monsanto. The transaction volume is €5.9 billion.

2.1.4 Economic Environment

World economy grows faster than in the previous year

The global economy grew at a faster pace in 2017 than in the previous year. In the United States, strong momentum resulted particularly from investment activity. In Europe, too, the pace of economic growth increased despite uncertainty concerning the form of the United Kingdom's exit from the European Union. The growth rate of the Emerging Markets also picked up considerably. The Chinese economy maintained the high level of growth seen in the previous year.

See also A 2.2.2

A 2.1.4/1

Economic Environment

	Growth[1] 2016	Growth[1] 2017
World	+2.5%	+3.2%
European Union	+1.9%	+2.5%
of which Germany	+1.9%	+2.6%
United States	+1.5%	+2.2%
Emerging Markets[2]	+3.9%	+4.8%

2016 figures restated
[1] Real GDP growth, source: IHS Markit
[2] Including about 50 countries defined by Global Insight as Emerging Markets in line with the World Bank
As of January 2018

Currency development

Negative currency effects diminished sales of the Bayer Group by €490 million (–1.4%) and EBITDA before special items by €195 million (–2.1%) in 2017. This currency effect negatively impacted the margin of our business by 0.2 percentage points.

A 2.1.4/2

Currency Development Bayer Group

€ million	2016	2017	Delta Fx effect on sales	Delta Fx effect on clean EBITDA	Of which delta Fx effect from hedging
CAD	1.47	1.46	26	(3)	(21)
CNY	7.36	7.61	(84)	(42)	(13)
GBP	0.82	0.88	(74)	(53)	(15)
JPY	120.06	126.39	(119)	5	67
RUB	73.79	65.71	103	47	(29)
USD	1.11	1.13	(125)	26	41
All currencies			(490)	(195)	(11)

Source: Bloomberg, annual average closing rates

2.2 Earnings; Asset and Financial Position of the Bayer Group

2.2.1 Earnings Performance of the Bayer Group

A 2.2.1/1

Bayer Group Summary Income Statements

€ million	Q4 2016	Q4 2017	Change %	2016	2017	Change %
Net sales	8,823	8,596	–2.6	34,943	35,015	+0.2
Cost of goods sold	(3,148)	(3,047)	–3.2	(11,756)	(11,382)	–3.2
Selling expenses	(3,198)	(3,074)	–3.9	(11,148)	(11,116)	–0.3
Research and development expenses	(1,245)	(1,234)	–0.9	(4,405)	(4,504)	+2.2
General administration expenses	(553)	(588)	+6.3	(1,804)	(2,026)	+12.3
Other operating income (+) and expenses (–)	(93)	(28)	–69.9	(92)	(84)	–8.7
EBIT[1]	**586**	**625**	**+6.7**	**5,738**	**5,903**	**+2.9**
Financial result	**(224)**	**(258)**	**+15.2**	**(965)**	**(1,326)**	**+37.4**
Income before income taxes	**362**	**367**	**+1.4**	**4,773**	**4,577**	**–4.1**
Income taxes	(63)	(435)	.	(1,017)	(1,329)	+30.7
Income from continuing operations after taxes	299	(68)	–122.7	3,756	3,248	–13.5
Income from discontinued operations after taxes	208	218	+4.8	1,070	4,846	.
Income after income taxes (total)	**507**	**150**	**–70.4**	**4,826**	**8,094**	**+67.7**
of which attributable to noncontrolling interest	54	2	–96.3	295	758	+157.0
of which attributable to Bayer AG stockholders (net income)	**453**	**148**	**–67.3**	**4,531**	**7,336**	**+61.9**

2016 figures restated

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

Group sales increased by 1.5% (Fx & portfolio adj.)

Sales of the Bayer Group rose by 1.5% (Fx & portfolio adj.) to €35,015 million (reported: +0.2%) in 2017, including €3,392 million in Germany.

Sales of Pharmaceuticals advanced by 4.3% (Fx & portfolio adj.) to €16,847 million. Our key growth products once again posted strong gains. Consumer Health registered a slight decline in sales of 1.7% (Fx & portfolio adj.) to €5,862 million. Sales of Crop Science also declined slightly, moving back by 2.2% (Fx & portfolio adj.) to €9,577 million, while sales at Animal Health increased by 2.0% (Fx & portfolio adj.) to €1,571 million.

A 2.2.1/2

Changes in Sales

	Bayer Group	
%	**2016**	**2017**
Volume	+3.9	+2.3
Price	+0.8	−0.8
Currency	−2.2	−1.4
Portfolio	0.0	+0.1
Total	+2.5	**+0.2**

2016 figures restated

Online Annex: A 2.2.1-1

A.2.2.1-1/1

Business Development by Region

			Change in %[1]				Change in %[1]	
€ million	**Q4 2016**	**Q4 2017**	**Reported**	**Fx adj.**	**2016**	**2017**	**Reported**	**Fx adj.**
Europe / Middle East / Africa	2,962	3,115	+5.2	+6.9	13,062	13,388	+2.5	+2.9
North America	2,413	2,219	−8.0	−1.0	10,066	10,143	+0.8	+1.7
Asia / Pacific	1,862	1,774	−4.7	+3.1	7,413	7,637	+3.0	+5.7
Latin America	1,586	1,488	−6.2	+0.1	4,402	3,847	−12.6	−9.5
Group (incl. Reconciliation)	**8,823**	**8,596**	**−2.6**	**+2.7**	**34,943**	**35,015**	**+0.2**	**+1.6**

2016 figures restated
Fx adj.= currency adjusted
[1] For definition see A 2.4 “Alternative Performance Measures Used by the Bayer Group.”

The cost of goods sold declined by 3.2% to €11,382 million in 2017. The ratio of the cost of goods sold to total sales therefore declined year on year to 32.5% (2016: 33.6%). The selling expenses of €11,116 million (–0.3%) amounted to 31.7% of sales (2016: 31.9%). Research and development (R&D) expenses rose by 2.2% to €4,504 million. The ratio of R&D expenses to sales was 12.9% (2016: 12.6%). General administration expenses climbed by 12.3% to €2,026 million, due especially to additional expenditures for the Monsanto acquisition. The ratio of general administration expenses to total sales therefore increased to 5.8% (2016: 5.2%). The balance of other operating expenses and other operating income of minus €84 million (2016: minus €92 million) was at the prior-year level.

EBITDA before special items at prior-year level

EBITDA before special items of the Bayer Group was at the prior-year level (–0.3%), coming in at €9,288 million (2016: €9,318 million; Fx adj. +1.8%). At Pharmaceuticals, EBITDA before special items climbed by an encouraging 8.8% to €5,711 million (2016: €5,251 million). This growth was chiefly due to the good business development of our key growth products coupled with a lower cost of goods sold. At Consumer Health, EBITDA before special items declined substantially, falling by 12.8% to €1,231 million, due particularly to lower volumes and a higher cost of goods sold. EBITDA before special items also declined markedly at Crop Science, falling by 15.6% to €2,043 million. This was largely attributable to the effects of an adjustment in inventories in the distribution channel in Brazil. At Animal Health, EBITDA before special items improved substantially, rising by 9.2% to €381 million.

Depreciation and amortization

See also A 2.4

Depreciation, amortization and impairment losses declined by 13.2% in 2017 to €2,660 million (2016: €3,063 million). They comprised €1,679 million (2016: €2,193 million) in amortization and impairments on intangible assets and €981 million (2016: €870 million) in depreciation and impairments on property, plant and equipment. Impairment losses in the amount of €474 million (2016: €566 million) as well as accelerated depreciation in the amount of €28 million (2016: €5 million) were included in special items. EBITDA for the reporting year amounted to €8,563 million.

EBIT and special items

+2.9%
Increase in EBIT

See also A 2.4

EBIT increased by 2.9% in 2017 to €5,903 million after special charges of €1,227 million (2016: €1,088 million). These mainly comprised €450 million in impairment losses on intangible assets and €304 million in expenses in connection with the planned acquisition of Monsanto. Further special charges included €227 million for efficiency improvement programs and €188 million in provisions for litigations and legal risks. EBIT before special items rose by 4.5% to €7,130 million (2016: €6,826 million).

Special items by segment: see also A 2.2.2

In 2017, the following special effects were taken into account in calculating EBIT and EBITDA before special items.

A 2.2.1/3

Special Items Reconciliation by Segment[1]

€ million	EBIT Q4 2016	EBIT Q4 2017	EBIT 2016	EBIT 2017	EBITDA Q4 2016	EBITDA Q4 2017	EBITDA 2016	EBITDA 2017
Before special items	**1,173**	**1,257**	**6,826**	**7,130**	**1,806**	**1,783**	**9,318**	**9,288**
Pharmaceuticals	**(310)**	**(187)**	**(558)**	**(340)**	**(152)**	**(128)**	**(167)**	**(135)**
Consumer Health	**(199)**	**(258)**	**(292)**	**(300)**	**(38)**	**(54)**	**(115)**	**(86)**
Crop Science	**(39)**	**(155)**	**(143)**	**(408)**	**(37)**	**(111)**	**(141)**	**(327)**
Animal Health	**(5)**	**(23)**	**(7)**	**(31)**	**(4)**	**(21)**	**(6)**	**(29)**
Reconciliation	**(34)**	**(9)**	**(88)**	**(148)**	**(34)**	**(9)**	**(88)**	**(148)**
Restructuring	(34)	(15)	(83)	(57)	(34)	(15)	(83)	(57)
Litigations / legal risks	–	37	(5)	(60)	–	37	(5)	(60)
Acquisition costs	–	(31)	–	(31)	–	(31)	–	(31)
Total special items	**(587)**	**(632)**	**(1,088)**	**(1,227)**	**(265)**	**(323)**	**(517)**	**(725)**
Impairment losses / reversals	(330)	(304)	(561)	(450)	(12)	(2)	(12)	(3)
Litigations / legal risks	(85)	(88)	(94)	(188)	(85)	(88)	(94)	(188)
Acquisition costs	(64)	(134)	(186)	(304)	(64)	(134)	(186)	(304)
Restructuring	(104)	(103)	(242)	(227)	(100)	(97)	(220)	(197)
Divestments	(4)	(3)	(5)	(58)	(4)	(2)	(5)	(33)
After special items	**586**	**625**	**5,738**	**5,903**	**1,541**	**1,460**	**8,801**	**8,563**

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

A 2.2.1/4

Special Items Reconciliation by Functional Costs[1]

€ million	EBIT Q4 2016	EBIT Q4 2017	EBIT 2016	EBIT 2017	EBITDA Q4 2016	EBITDA Q4 2017	EBITDA 2016	EBITDA 2017
Total special items	**(587)**	**(632)**	**(1,088)**	**(1,227)**	**(265)**	**(323)**	**(517)**	**(725)**
of which cost of goods sold	(193)	(48)	(412)	(163)	(53)	(44)	(93)	(105)
of which selling expenses	(221)	(249)	(317)	(305)	(39)	(47)	(99)	(71)
of which research and development expenses	(18)	(116)	(84)	(232)	(17)	(13)	(50)	(22)
of which general administration expenses	(69)	(131)	(185)	(339)	(69)	(131)	(185)	(339)
of which other operating income/expenses	(86)	(88)	(90)	(188)	(87)	(88)	(90)	(188)

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

Income after income taxes from discontinued operations

Income after income taxes from discontinued operations rose to €4,846 million (2016: €1,070 million). Of this amount, €4,468 million (2016: €802 million) was attributable to Covestro. This figure primarily comprises a gain from deconsolidation and on remeasurement of the remaining interest at the end of the third quarter, as well as operating income in the first nine months of 2017. In comparison with the prior-year reporting period, Covestro increased sales during the first nine months of 2017 by 19.9% (Fx & portfolio adj.) to €10,556 million (9M 2016: €8,829 million), in particular owing to significantly higher selling prices and higher volumes. EBITDA before special items of Covestro improved by 56.2% in the first nine months to €2,517 million (9M 2016: €1,611 million). Substantially higher selling prices more than offset increased raw material prices.

Increase in net income

Including a financial result of minus €1,326 million (2016: minus €965 million), income before income taxes was €4,577 million (2016: €4,773 million). Among other items, the financial result comprised net interest expense of €413 million (2016: €504 million), currency hedging costs in the amount of €326 million (2016: €121 million), and interest cost of €189 million (2016: €251 million) for pension and other provisions, as well as net other financial expenses of €428 million (2016: €87 million). The financial result included special charges of €611 million (2016: positive special items of €105 million), mainly in conjunction with the planned acquisition of Monsanto and the exchangeable bond issued in June 2017.

Income taxes amounted to €1,329 million (2016: €1,017 million). This includes a negative one-time effect of €455 million that relates exclusively to the tax reform in the United States and results from the revaluation of deferred tax items and the recognition of an additional tax on unrepatriated profits. After income tax expense, income from discontinued operations after taxes and noncontrolling interest, net income in 2017 came to €7,336 million (2016: €4,531 million).

Core earnings per share increased by 1.0%

Earnings per share (total) in 2017 improved to €8.41 (2016: €5.44). This takes into account the remeasurement of the shares in Covestro AG in the third quarter of 2017, which is reflected in income from discontinued operations. Core earnings per share from continuing operations improved by 1.0% to €6.74 (2016: €6.67). This includes the effect of the difference in the number of shares, which grew significantly in 2017 as a result of the mandatory convertible notes issued in November 2016. If the number of shares had remained the same, core earnings per share from continuing operations would have improved by 5.8% to €7.06.

See also A 2.2.4

A 2.2.1/5

Core Earnings per Share[1]

€ million	Q4 2016	Q4 2017	2016	2017
EBIT (as per income statements)	**586**	**625**	**5,738**	**5,903**
Amortization and impairment losses/loss reversals on intangible assets	717	602	2,193	1,679
Impairment losses/loss reversals on property, plant and equipment, and accelerated depreciation included in special items	12	16	29	84
Special items (other than accelerated depreciation, amortization and impairment losses/loss reversals)	265	323	517	725
Core EBIT	**1,580**	**1,566**	**8,477**	**8,391**
Financial result (as per income statements)	(224)	(258)	(965)	(1,326)
Special items in the financial result	(61)	250	(105)	611
Income taxes (as per income statements)	(63)	(435)	(1,017)	(1,329)
Special items in income taxes	–	455	–	455
Tax effects related to amortization, impairment losses/loss reversals and special items	(293)	(342)	(826)	(922)
Income after income taxes attributable to noncontrolling interest (as per income statements)	(4)	(2)	(13)	1
Above-mentioned adjustments attributable to noncontrolling interest	–	–	(1)	–
Core net income from continuing operations	**935**	**1,234**	**5,550**	**5,881**
Shares				
Weighted average number of shares	**849,167,808**	**872,467,808**	**832,502,808**	**872,107,808**
€				
Core earnings per share from continuing operations	**1.10**	**1.41**	**6.67**	**6.74**

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

Online Annex: A 2.2.1-2

Development in the fourth quarter of 2017

Group sales in the fourth quarter of 2017 rose by 2.7% (Fx & portfolio adj.) to €8,596 million (reported: –2.6%). Germany accounted for €883 million of this figure.

Sales of Pharmaceuticals improved by 3.6% (Fx & portfolio adj.) to €4,215 million (reported: –1.4%), due in particular to the strong business development of our key growth products. Sales at Consumer Health came in 4.2% (Fx & portfolio adj.) below the prior-year quarter at €1,399 million (reported: –9.1%). Sales of Crop Science were up slightly year on year, advancing by 1.1% (Fx & portfolio adj.) to €2,263 million (reported: –5.9%). Animal Health sales edged 1.8% higher to €322 million.

EBITDA before special items of the Bayer Group declined slightly, moving back by 1.3% to €1,783 million in the fourth quarter of 2017 (Q4 2016: €1,806 million; Fx adj. +4.4%). At Pharmaceuticals, EBITDA before special items edged forward by 1.5% to €1,235 million (Q4 2016: €1,217 million). EBITDA before special items of Consumer Health fell by a substantial 32.5% to €251 million. EBITDA before special items of Crop Science declined by 13.4% to €304 million (Q4 2016: €351 million). EBITDA before special items of Animal Health increased markedly, moving forward by 28.9% to €49 million (Q4 2016: €38 million).

EBIT of the Bayer Group climbed by 6.7% to €625 million in the fourth quarter of 2017 (Q4 2016: €586 million) after special charges of €632 million (Q4 2016: €587 million). These mainly comprised €304 million in impairment losses on intangible assets and €134 million in expenses related to the planned acquisition of Monsanto. Litigations resulted in additional charges of €88 million. EBIT before special items advanced by 7.2% to €1,257 million (Q4 2016: €1,173 million).

A 2.2.1-2/1

Bayer Group Quarterly Sales, EBIT and EBITDA before Special Items

	Q1		Q2		Q3		Q4		Total	
€ million	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Sales	9,004	9,680	8,858	8,714	8,258	8,025	8,823	8,596	34,943	35,015
EBIT[1]	1,984	2,427	1,771	1,463	1,397	1,388	586	625	5,738	5,903
EBITDA before special items[1]	2,883	3,054	2,511	2,247	2,118	2,204	1,806	1,783	9,318	9,288

2016 figures restated.
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."

Including a **financial result** of minus €258 million (Q4 2016: minus €224 million), **income before income taxes** came in at €367 million (Q4 2016: €362 million). The financial result mainly comprised net interest expense of €59 million (Q4 2016: €135 million), interest cost of €46 million (Q4 2016: €73 million) for pension and other provisions, and currency hedging losses of €5 million (Q4 2016: currency hedging gains of €36 million), as well as other financial income and expenses of minus €187 million (2016: minus €48 million). The financial result included special charges of €250 million (2016: positive special items of €61 million), mainly in conjunction with the planned acquisition of Monsanto and the exchangeable bond issued in June 2017.

Income taxes amounted to €435 million (Q4 2016: €63 million). This figure includes a negative special effect of €455 million that relates to the tax reform in the United States and results from the revaluation of deferred tax items and the recognition of an additional tax on unrepatriated profits. After income tax expense, income from discontinued operations after taxes and noncontrolling interest, **net income** in the fourth quarter of 2017 came to €148 million (Q4 2016: €453 million).

Earnings per share (total) declined to €0.17 in the fourth quarter of 2017 (Q4 2016: €0.53), due mainly to a special effect in income tax expense in connection with the tax reform in the United States. **Core earnings per share** from continuing operations improved to €1.41 (Q4 2016: €1.10). This is partly due to the difference in the number of shares, which grew significantly in 2017 as a result of the mandatory convertible notes issued in November 2016. If the number of shares had remained the same, core earnings per share would have improved by 31.8% to €1.45.

Net cash provided by operating activities in continuing operations increased by 12.8% to €2,256 million (Q4 2016: €2,000 million), due mainly to lower tax payments. In the fourth quarter of 2017, we paid income taxes amounting to €291 million (Q4 2016: €576 million). Cash inflows from operating activities (total) fell by a substantial 16.9% to €2,269 million (Q4 2016: €2,732 million), due entirely to the deconsolidation of Covestro in the preceding quarter.

Net financial debt declined by €1.1 billion in the fourth quarter of 2017 to €3.6 billion (September 30, 2017: €4.7 billion), due mainly to cash inflows from operating activities. The **net defined benefit liability for post-employment** benefits increased by €0.2 billion against September 30, 2017, to €8.0 billion, due primarily to a slight decline in long-term capital market interest rates for high-quality corporate bonds in Germany.

2.2.2 Business Development by Segment

Pharmaceuticals

Pharmaceuticals market continues to grow

Growth in the pharmaceuticals market in 2017 was 3% (2016: 5%). Intensified pricing pressure caused by generic competition and health care reforms led to lower growth in all regions compared with the prior year.

A 2.2.2/1

Key Data – Pharmaceuticals

			Change %[1]				Change %[1]	
€ million	Q4 2016	Q4 2017	Reported	Fx & p adj.	2016	2017	Reported	Fx & p adj.
Sales	**4,275**	**4,215**	**–1.4**	**+3.6**	**16,420**	**16,847**	**+2.6**	**+4.3**
Change in sales[1]								
Volume	+7.2%	+6.4%			+9.0%	+5.2%		
Price	–0.1%	–2.8%			–0.3%	–0.9%		
Currency	+0.2%	–4.8%			–1.4%	–1.7%		
Portfolio	0.0%	–0.2%			0.0%	0.0%		
			Reported	**Fx adj.**			**Reported**	**Fx adj.**
Sales by region								
Europe/Middle East/Africa	1,684	1,720	+2.1	+3.7	6,417	6,521	+1.6	+2.4
North America	1,107	1,027	–7.2	–1.1	4,194	4,229	+0.8	+2.1
Asia/Pacific	1,203	1,188	–1.2	+7.1	4,775	5,013	+5.0	+8.5
Latin America	281	280	–0.4	+2.5	1,034	1,084	+4.8	+5.1
EBITDA[1]	**1,065**	**1,107**	**+3.9**		**5,084**	**5,576**	**+9.7**	
Special items[1]	(152)	(128)			(167)	(135)		
EBITDA before special items[1]	**1,217**	**1,235**	**+1.5**		5,251	**5,711**	**+8.8**	
EBITDA margin before special items[1]	28.5%	29.3%			32.0%	33.9%		
EBIT[1]	**606**	**795**	**+31.2**		**3,389**	**4,325**	**+27.6**	
Special items[1]	(310)	(187)			(558)	(340)		
EBIT before special items[1]	**916**	**982**	**+7.2**		**3,947**	**4,665**	**+18.2**	
Net cash provided by operating activities	**1,326**	**1,330**	**+0.3**		**3,368**	**3,867**	**+14.8**	

Fx & p adj. = currency- and portfolio-adjusted; Fx adj. = currency-adjusted
[1] For definition see A 2.4 “Alternative Performance Measures Used by the Bayer Group.”

Increase in sales

Sales of Pharmaceuticals rose by 4.3% (Fx & portfolio adj.) to €16,847 million in 2017. Our key growth products Xarelto™, Eylea™, Stivarga™, Xofigo™ and Adempas™ once again registered strong growth, as their combined sales rose by 16.3% (Fx adj.) to €6,196 million (2016: €5,413 million). Combined sales of the 15 best-selling Pharmaceuticals products advanced by 6.9% (Fx adj.). Sales of Kogenate™ declined considerably due particularly to a lower order volume for the active ingredient from a distribution partner. After adjusting for this effect, sales of Pharmaceuticals rose by 5.6% (Fx & portfolio adj.).

A 2.2.2/2

Best-Selling Pharmaceuticals Products

			Change % [1]				Change % [1]	
€ million	Q4 2016	Q4 2017	Reported	Fx adj.	2016	2017	Reported	Fx adj.
Xarelto™	836	914	+9.3	+12.5	2,928	3,298	+12.6	+13.9
of which U.S.A.[2]	161	178	+10.6	+10.1	489	519	+6.1	+6.0
Eylea™	426	507	+19.0	+24.2	1,625	1,880	+15.7	+18.5
of which U.S.A.[3]	0	0	.	.	0	0	.	.
Xofigo™	90	101	+12.2	+20.0	331	408	+23.3	+25.6
of which U.S.A.	59	59	.	+8.4	225	242	+7.6	+9.6
Stivarga™	77	80	+3.9	+12.4	275	315	+14.5	+17.2
of which U.S.A.	42	41	−2.4	+7.2	142	166	+16.9	+19.3
Adempas™	70	72	+2.9	+8.7	254	295	+16.1	+17.8
of which U.S.A.	35	30	−14.3	−3.3	121	144	+19.0	+21.3
Subtotal key growth products	1,499	1,674	+11.7	+16.1	5,413	6,196	+14.5	+16.3
Mirena™ product family	268	255	−4.9	+2.0	1,043	1,126	+8.0	+9.2
of which U.S.A.	178	161	−9.6	−1.3	701	746	+6.4	+8.1
Kogenate™ / Kovaltry™	288	217	−24.7	−21.2	1,166	967	−17.1	−15.9
of which U.S.A.	106	68	−35.8	−30.4	394	322	−18.3	−17.0
Nexavar™	224	204	−8.9	−3.3	870	834	−4.1	−2.7
of which U.S.A.	80	67	−16.3	−8.8	312	294	−5.8	−4.1
Betaferon™ / Betaseron™	185	152	−17.8	−12.6	734	651	−11.3	−10.0
of which U.S.A.	94	80	−14.9	−7.5	386	357	−7.5	−6.1
Adalat™	147	147	.	.	624	648	+3.8	+7.0
of which U.S.A.	0	0	.	.	1	0	.	.
YAZ™ / Yasmin™ / Yasminelle™	159	153	−3.8	−0.1	678	648	−4.4	−4.2
of which U.S.A.	21	14	−33.3	−29.3	128	83	−35.2	−34.7
Aspirin™ Cardio	135	137	+1.5	+7.1	538	581	+8.0	+10.5
of which U.S.A.	0	0	.	.	0	0	.	.
Glucobay™	123	130	+5.7	+12.3	515	563	+9.3	+13.0
of which U.S.A.	1	0	.	.	3	2	.	.
Gadavist™ / Gadovist™	88	89	+1.1	+6.3	346	365	+5.5	+7.2
of which U.S.A.	24	25	+4.2	+10.7	104	116	+11.5	+12.7
Avalox™ / Avelox™	81	75	−7.4	−13.3	353	333	−5.7	−5.1
of which U.S.A.	1	1	.	.	5	7	+40.0	+36.4
Total best-selling products	**3,197**	**3,233**	**+1.1**	**+5.6**	**12,280**	**12,912**	**+5.1**	**+6.9**
Proportion of Pharmaceuticals sales	75%	77%			75%	77%		
Total best-selling products in U.S.A.	**802**	**724**	**−9.7**	**−3.7**	**3,011**	**2,998**	**−0.4**	**+0.9**

Fx adj. = currency-adjusted
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."
[2] Marketing rights owned by a subsidiary of Johnson & Johnson, U.S.A.
[3] Marketing rights owned by Regeneron Pharmaceuticals Inc., U.S.A.

Sales by product

- Business with our oral anticoagulant **Xarelto™** continued to develop successfully in 2017. The significant growth in sales was primarily attributable to higher volumes in Europe, Japan and China. We also posted further gains for our license revenues – recognized as sales – in the United States, where Xarelto™ is marketed by a subsidiary of Johnson & Johnson.
- We recorded strong growth with our eye medicine **Eylea™**, due especially to expanded volumes in Europe, Canada and Japan.
- Sales of our cancer drug **Xofigo™** increased significantly, due mainly to its market launch in Japan in 2016 and to higher demand in the United States.
- We registered a substantial increase in sales of our cancer drug **Stivarga™**. Here we benefited from new approvals for the drug in 2017 as a second-line treatment for patients with hepatocellular carcinoma, especially in the United States and Japan.

+16.3%
growth in sales of our key growth products (Fx adj.)

- We posted strong growth in sales of our pulmonary hypertension treatment **Adempas™**, mainly as a result of expanded volumes in the United States. As in the past, sales of the product reflected the proportionate recognition of upfront and milestone payments resulting from the sGC collaboration with Merck & Co., United States.
- Business with the hormone-releasing intrauterine devices of the **Mirena™ product family** (Mirena™, Kyleena™ and Jaydess™ / Skyla™) expanded noticeably. This trend mainly reflected the successful launch of the Kyleena™ intrauterine device, which led to higher volumes particularly in the United States and Europe. Sales of Mirena™ grew primarily in Latin America and China.
- Sales of the blood-clotting medicines **Kogenate™ / Kovaltry™** were down sharply overall due to lower order volumes being placed for the active ingredient by a distribution partner ahead of the planned contract termination at the end of the year. Adjusted for this development, sales came in at the prior-year level.
- We registered a slight decline in sales of our cancer drug **Nexavar™**. This resulted from decreased demand and elevated pressure on prices, particularly in Germany and the United States.
- As expected, sales of our multiple sclerosis product **Betaferon™ / Betaseron™** continued to fall. Volumes receded primarily as a result of a highly competitive market environment in the United States and Europe.
- We registered a decline in sales of our **YAZ™ / Yasmin™ / Yasminelle™** line of oral contraceptives, due primarily to generic competition in the United States. Sales growth in Japan, where we benefited from a product line extension, and in China was insufficient to offset this effect.
- We posted marked sales gains for **Adalat™**, our product to treat hypertension, our **Aspirin™ Cardio** product for the secondary prevention of heart attacks, and for our diabetes treatment **Glucobay™**, mainly as a result of a continued positive business performance in China.
- There was an encouraging increase in sales of our MRI contrast agent **Gadavist™ / Gadovist™** that was primarily attributable to the positive development of business in the United States and Japan.
- Sales of the antibiotic **Avalox™ / Avelox™** declined mainly as a result of lower license revenues in Europe. Encouraging sales development in China was not sufficient to offset this effect.

Earnings

In 2017, **EBITDA before special items** increased by an encouraging 8.8% to €5,711 million. Adjusted for negative currency effects of €98 million, earnings advanced by 10.6%. Growth was mainly driven by higher volumes and a lower cost of goods sold. Expenses for research and development were level with the prior year and included a gain in the mid-double-digit millions from a development collaboration. In addition, we recorded a positive earnings effect from the recognition of a receivable in the mid-double-digit millions as one of our distribution partners for the active ingredient in Kogenate™ did not fulfill its purchase obligation.

EBIT of Pharmaceuticals rose by a substantial 27.6% to €4,325 million, after special charges of €340 million (2016: €558 million). These mainly comprised €207 million in impairment losses on intangible assets and €124 million in provisions for litigations.

A 2.2.2/3

Special Items[1] Pharmaceuticals

€ million	EBIT Q4 2016	EBIT Q4 2017	EBIT 2016	EBIT 2016	EBITDA Q4 2016	EBITDA Q4 2017	EBITDA 2016	EBITDA 2017
Restructuring	(51)	(2)	(69)	(9)	(51)	(2)	(67)	(8)
Litigations	(89)	(124)	(88)	(124)	(89)	(124)	(88)	(124)
Impairment losses / reversals	(170)	(61)	(401)	(207)	(12)	(2)	(12)	(3)
Total special items	**(310)**	**(187)**	**(558)**	**(340)**	**(152)**	**(128)**	**(167)**	**(135)**

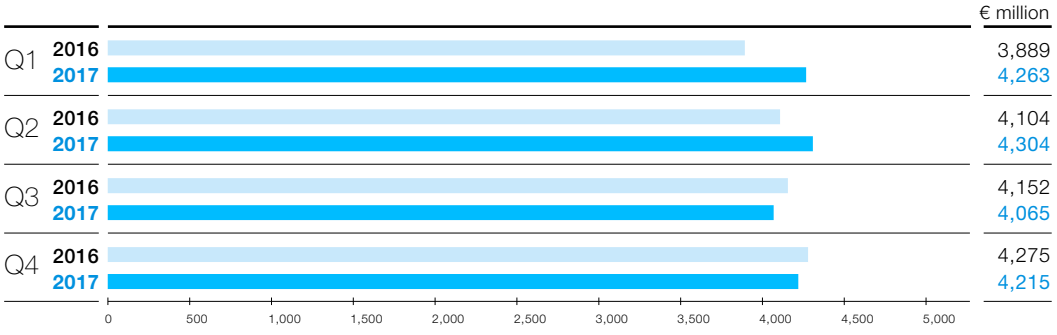
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."

Online Annex: A 2.2.2-1

The development of Pharmaceuticals in 2017 is shown in the following graphics (A 2.2.2-1/1, A 2.2.2-1/2 and A 2.2.2-1/3).

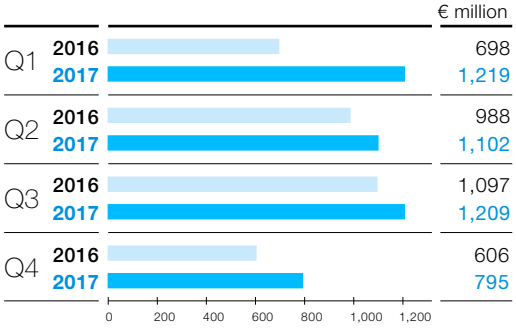
A 2.2.2-1/1

Pharmaceuticals Quarterly Sales



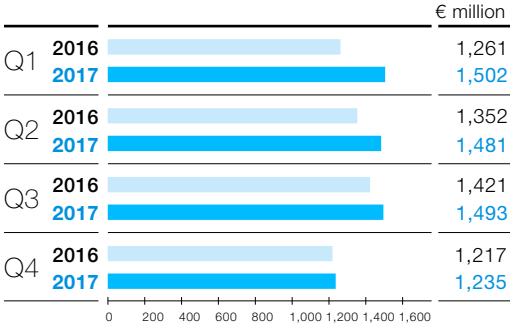
A 2.2.2-1/2

Pharmaceuticals Quarterly EBIT[1]



A 2.2.2-1/3

Pharmaceuticals Quarterly EBITDA before Special Items[1]



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

Consumer Health

Market growth unchanged

In 2017, growth of the global Consumer Health market came in at slightly below 4% (2016: 4%). Important growth drivers included steady demand for self-care products and a strong cold season in Europe. In contrast, a weaker allergy season, pricing pressure in the e-commerce distribution channel, and intensified competition weighed on growth.

A 2.2.2/4

Key Data – Consumer Health

			Change %[1]				Change %[1]	
€ million	Q4 2016	Q4 2017	Reported	Fx & p adj.	2016	2017	Reported	Fx & p adj.
Sales	**1,539**	**1,399**	**–9.1**	**–4.2**	**6,037**	**5,862**	**–2.9**	**–1.7**
Changes in sales[1]								
Volume	+1.5%	–4.2%			+0.6%	–3.0%		
Price	+2.9%	0.0%			+2.9%	+1.3%		
Currency	–2.2%	–4.9%			–4.1%	–1.2%		
Portfolio	0.0%	0.0%			0.0%	0.0%		
			Reported	**Fx adj.**			**Reported**	**Fx adj.**
Sales by region								
Europe / Middle East / Africa	499	491	–1.6	+0.8	1,918	1,962	+2.3	+2.1
North America	649	581	–10.5	–2.5	2,627	2,480	–5.6	–4.1
Asia / Pacific	194	145	–25.3	–19.6	781	738	–5.5	–4.0
Latin America	197	182	–7.6	–6.6	711	682	–4.1	–0.4
EBITDA[1]	**334**	**197**	**–41.0**		**1,296**	**1,145**	**–11.7**	
Special items[1]	(38)	(54)			(115)	(86)		
EBITDA before special items[1]	**372**	**251**	**–32.5**		**1,411**	**1,231**	**–12.8**	
EBITDA margin before special items[1]	24.2%	17.9%			23.4%	21.0%		
EBIT[1]	**68**	**(110)**	.		**695**	**518**	**–25.5**	
Special items[1]	(199)	(258)			(292)	(300)		
EBIT before special items[1]	**267**	**148**	**–44.6**		**987**	**818**	**–17.1**	
Net cash provided by operating activities	**221**	**297**	**+34.4**		**874**	**1,059**	**+21.2**	

Fx & p adj. = currency- and portfolio-adjusted; Fx adj. = currency-adjusted
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."

Sales decline slightly against the previous year

Sales of Consumer Health fell by 1.7% (Fx & portfolio adj.) in 2017 to €5,862 million. This was attributable to persistently weak business development in the United States. Furthermore, the Chinese authorities changed the legal status of two of our medicated skincare brands from OTC to prescription, which led to sales declines of around €70 million in the fourth quarter of 2017. Sales in Latin America came in at the prior-year level (Fx adj.). By contrast, business expanded slightly in Europe / Middle East / Africa, and particularly in Germany.

A 2.2.2/5

Best-Selling Consumer Health Products

			Change % [1]				Change % [1]	
€ million	Q4 2016	Q4 2017	Reported	Fx adj.	2016	2017	Reported	Fx adj.
Claritin™	122	113	–7.4	+3.2	605	585	–3.3	–2.4
Aspirin™	126	124	–1.6	+4.5	463	462	–0.2	+1.8
Bepanthen™/Bepanthol™	90	96	+6.7	+13.6	362	379	+4.7	+6.6
Aleve™	115	103	–10.4	–2.8	416	375	–9.9	–7.9
Canesten™	64	68	6.3	–12.4	269	278	+3.3	+3.5
Alka-Seltzer™ product family	87	73	–16.1	–9.2	253	244	–3.6	–1.2
One A Day™	67	63	–6.0	+4.2	222	222	0.0	+2.3
Dr. Scholl's™ [2]	55	54	–1.8	+4.4	235	211	–10.2	–8.6
Coppertone™	17	11	–35.3	–22.7	219	208	–5.0	–6.5
Elevit™	48	42	–12.5	–5.6	182	189	+3.8	+4.7
Total	**791**	**747**	**–5.6**	**+0.2**	**3,226**	**3,153**	**–2.3**	**–0.9**
Proportion of Consumer Health sales	51%	53%			53%	54%		

Fx adj. = currency-adjusted
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."
[2] Trademark rights and distribution only in certain countries outside the European Union

Sales by product

- Sales of the antihistamine **Claritin™** were down slightly against the previous year, in which we benefited from a product line extension in the United States. The main reason for this was intensified competition in the United States and Japan. Sales developed positively in China.
- We posted slight growth for our analgesic **Aspirin™** that resulted primarily from a positive business performance in North America and Europe/Middle East/Africa. Including business with Aspirin™ Cardio, which is reported under Pharmaceuticals, sales climbed by 6.5% (Fx adj.) to €1,043 million (2016: €1,001 million).
- Business with our **Bepanthen™/Bepanthol™** wound and skin care products expanded. We achieved gratifying sales gains particularly in Europe/Middle East/Africa, and especially in Germany.
- Sales of our analgesic **Aleve™** fell sharply compared with the previous year, which benefited from a product line extension. The primary reason for the sales decline in 2017 was intense competition in the United States.
- We achieved sales growth with our **Canesten™** skin and intimate health products, in a development that was mainly attributable to a positive business performance in China and the United Kingdom.
- Sales of our **Alka-Seltzer™** product family to treat gastric complaints and cold symptoms declined slightly against the previous year. Sales declines in Latin America were partly offset by gains in the United States that resulted mainly from a strong cold season.
- Sales of our **One A Day™** vitamin product advanced further on a currency-adjusted basis, especially in the United States, where we benefited from the expansion of our regular and e-commerce distribution channels.
- Sales of our **Dr. Scholl's™** foot care products declined markedly, particularly in the United States, due to the repositioning of the brand. The success that followed this move was not sufficient to fully offset the associated inventory reduction.
- Sales of our sunscreen product **Coppertone™** were lower, primarily as a result of intensified competition in the United States and Brazil.
- Business with our prenatal vitamin **Elevit™** developed well, due mainly to steady demand in Asia/Pacific.

Earnings

In 2017, **EBITDA before special items** declined by a substantial 12.8% to €1,231 million. Adjusted for negative currency effects of €25 million, earnings were down 11.0%. This decline was largely due to lower volumes, in part as a consequence of the reverse switch in China and the associated effect of around €50 million, as well as a higher cost of goods sold, primarily as a result of inventory impairments. Earnings were also held back by higher selling expenses. Positive contributions came from one-time gains of around €80 million, predominantly relating to the divestment of noncore brands.

EBIT of Consumer Health receded by 25.5% to €518 million, after special charges of €300 million (2016: €292 million). These comprised €202 million for impairment losses on intangible assets and €98 million for restructuring measures.

A2.2.2/6

Special Items[1] Consumer Health

€ million	EBIT Q4 2016	EBIT Q4 2017	EBIT 2016	EBIT 2017	EBITDA Q4 2016	EBITDA Q4 2017	EBITDA 2016	EBITDA 2017
Restructuring	(9)	(56)	(32)	(98)	(8)	(54)	(15)	(86)
Integration costs	(30)	–	(100)	–	(30)	–	(100)	–
Impairment losses / reversals	(160)	(202)	(160)	(202)	–	–	–	–
Total special items	**(199)**	**(258)**	**(292)**	**(300)**	**(38)**	**(54)**	**(115)**	**(86)**

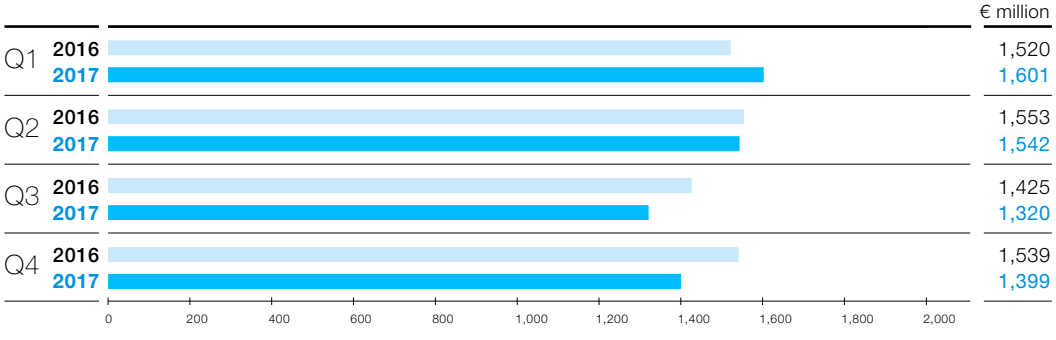
[1] For definition see A 2.4 “Alternative Performance Measures Used by the Bayer Group.”

Online Annex: A 2.2.2-2

The development of Consumer Health in 2017 is shown in the following graphics (A 2.2.2-2/1, A 2.2.2-2/2 and A 2.2.2-2/3).

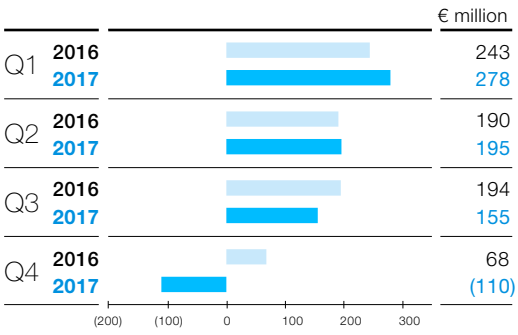
A 2.2.2-2/1

Consumer Health Quarterly Sales



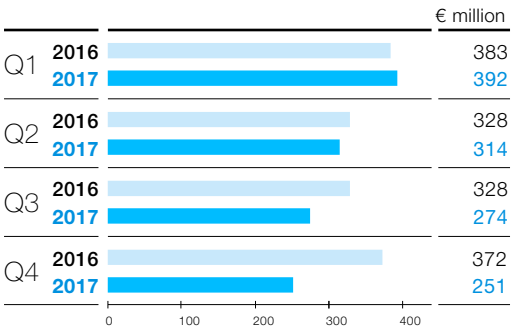
A 2.2.2-2/2

Consumer Health
Quarterly EBIT [1]



A 2.2.2-2/3

Consumer Health
Quarterly EBITDA before Special Items [1]



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

Crop Science

Market environment improves slightly

Overall, the global seed and crop protection market expanded slightly in 2017, growing by around 1% (2016: 0%). While demand for high-quality seed increased, sales of crop protection products stagnated worldwide. Positive growth momentum in 2017 came from the North America and Eastern Europe regions. Market volumes in Latin America declined as a result of high inventories of crop protection products and unfavorable macroeconomic conditions in Brazil. The Western European market also contracted, primarily as a result of relatively low fungal infestation levels.

A 2.2.2/7

Key Data – Crop Science

			Change % [1]				Change % [1]	
€ million	Q4 2016	Q4 2017	Reported	Fx & p adj.	2016	2017	Reported	Fx & p adj.
Sales	**2,404**	**2,263**	**–5.9**	**1.1**	**9,915**	**9,577**	**–3.4**	**–2.2**
Change in sales [1]								
Volume	–0.4%	+5.3%			–1.3%	+0.3%		
Price	–1.2%	–4.2%			+1.4%	–2.5%		
Currency	+1.6%	–7.0%			–2.3%	–1.2%		
Portfolio	0.0%	0.0%			+0.1%	0.0%		
			Reported	**Fx adj.**			**Reported**	**Fx adj.**
Sales by region								
Europe / Middle East / Africa	431	440	+2.1	+3.7	3,290	3,335	+1.4	+1.5
North America	527	479	–9.1	–1.1	2,616	2,772	+6.0	+5.8
Asia / Pacific	384	358	–6.8	+0.5	1,548	1,563	+1.0	+2.0
Latin America	1,062	986	–7.2	+1.1	2,461	1,907	–22.5	–18.0
EBITDA [1]	**314**	**193**	**–38.5**		**2,280**	**1,716**	**–24.7**	
Special items [1]	(37)	(111)			(141)	(327)		
EBITDA before special items [1]	**351**	**304**	**–13.4**		**2,421**	**2,043**	**–15.6**	
EBITDA margin before special items [1]	14.6%	13.4%			24.4%	21.3%		
EBIT [1]	**153**	**64**	**–58.2**		**1,755**	**1,235**	**–29.6**	
Special items [1]	(39)	(155)			(143)	(408)		
EBIT before special items [1]	**192**	**219**	**+14.1**		**1,898**	**1,643**	**–13.4**	
Net cash provided by operating activities	**622**	**552**	**–11.3**		**2,071**	**1,884**	**–9.0**	

Fx & p adj. = currency- and portfolio-adjusted; Fx adj. = currency-adjusted
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."

Sales down slightly against the previous year

Sales of Crop Science fell by 2.2% (Fx & portfolio adj.) in 2017 to €9,577 million. The decline was mainly attributable to the crop protection business in Brazil. High inventories in that market necessitated measures to normalize the situation that in turn led to negative sales development. When the Brazilian business is excluded, sales of Crop Science rose by 3.0% year on year on a currency- and portfolio-adjusted basis. Environmental Science posted a positive performance, in part due to the delivery of products to the company that acquired our consumer business.

A 2.2.2/8

Sales by Business Unit

			Change %[1]				Change %[1]	
€ million	Q4 2016	Q4 2017	Reported	Fx & p adj.	2016	2017	Reported	Fx & p adj.
Crop Protection / Seeds	**2,224**	**2,080**	**–6.5**	**+0.4**	**9,317**	**8,906**	**–4.4**	**–3.2**
Crop Protection	1,965	1,823	–7.2	–0.4	7,961	7,403	–7.0	–5.3
Herbicides	599	526	–12.2	–6.5	2,693	2,633	–2.2	–1.6
Fungicides	679	755	+11.2	+19.7	2,961	2,597	–12.3	–9.9
Insecticides	386	268	–30.6	–24.6	1,357	1,246	–8.2	–6.1
SeedGrowth	301	274	–9.0	–2.3	950	927	–2.4	–0.3
Seeds	259	257	–0.8	+6.6	1,356	1,503	+10.8	+9.1
Environmental Science	**180**	**183**	**+1.7**	**+9.4**	**598**	**671**	**+12.2**	**+14.0**

Fx & p adj. = currency- and portfolio-adjusted
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."

Sales by region

- Sales in the **Europe / Middle East / Africa** region improved by 1.5% (Fx adj.) to €3,335 million. Insecticides developed very positively, thanks in part to increased demand and the introduction of new products. We also achieved sales growth in the Seeds business, particularly for vegetables. On the other hand, increased competitive pressure led to declines at SeedGrowth and Fungicides.
- In the **North America** region, we posted a 5.8% (Fx adj.) increase in sales to €2,772 million. We registered a double-digit growth rate in the Seeds business, with robust sales gains for oilseed rape / canola – due to increased acreages in Canada – and for soybeans more than offsetting declines for cotton. SeedGrowth also developed very positively due to increased demand for products to treat soybean and wheat seed. In contrast, we recorded declines at Insecticides. Environmental Science, for its part, posted a considerable increase in sales.
- Sales in **Asia / Pacific** moved forward by 2.0% (Fx adj.) year on year to €1,563 million. Business performance was encouraging at Fungicides, particularly in Southeast Asia, and at Herbicides, mainly due to new product launches in China and Japan. We also achieved sales growth in the Seeds business, particularly for cotton and oilseeds, but posted a decline at Insecticides.
- Sales in **Latin America** decreased by 18.0% (Fx adj.) to €1,907 million. This decline was attributable to returns of crop protection products and to lower sales into the distribution channel to normalize inventories in Brazil. Price reductions also had an effect. We posted gains in sales overall in the other Latin American countries on a currency-adjusted basis.

Earnings

In 2017, **EBITDA before special items** of Crop Science declined by 15.6% to €2,043 million. Adjusted for negative currency effects of €63 million, earnings were down by 13.0%. The decline is largely attributable to the aforementioned situation in Brazil, which resulted in lower selling prices and volumes. Outside of Brazil, lower selling prices were offset by expanded volumes. Other operating income had a positive effect on earnings.

EBIT declined by 29.6% to €1,235 million, after special charges of €408 million (2016: €143 million) that primarily related to the planned acquisition of Monsanto and the execution of a divestment project.

A 2.2.2/9

Special Items[1] Crop Science

€ million	EBIT Q4 2016	EBIT Q4 2017	EBIT 2016	EBIT 2017	EBITDA Q4 2016	EBITDA Q4 2017	EBITDA 2016	EBITDA 2017
Restructuring	(5)	(7)	(51)	(32)	(3)	(5)	(49)	(17)
Litigations	4	(1)	(1)	(4)	4	(1)	(1)	(4)
Acquisition costs	(34)	(103)	(86)	(273)	(34)	(103)	(86)	(273)
Impairment losses / reversals	–	(41)	–	(41)	–	–	–	–
Divestments	(4)	(3)	(5)	(58)	(4)	(2)	(5)	(33)
Total special items	**(39)**	**(155)**	**(143)**	**(408)**	**(37)**	**(111)**	**(141)**	**(327)**

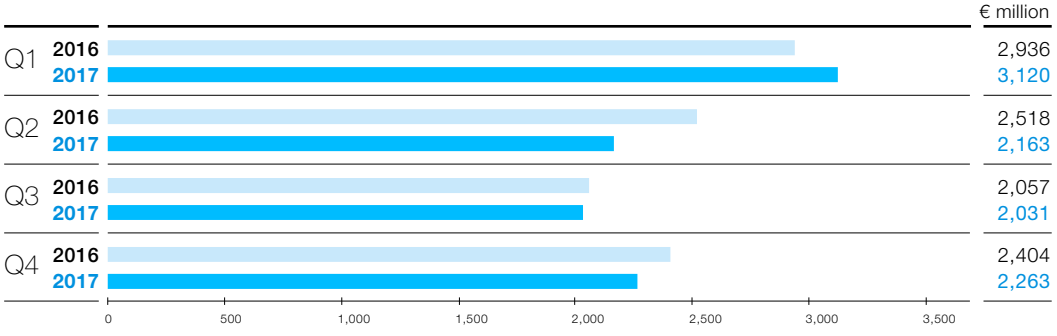
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."

Online Annex: A 2.2.2-3

The development of Crop Science in 2017 is shown in the following graphics (A 2.2.2-3/1, A 2.2.2-3/2 and A 2.2.2-3/3).

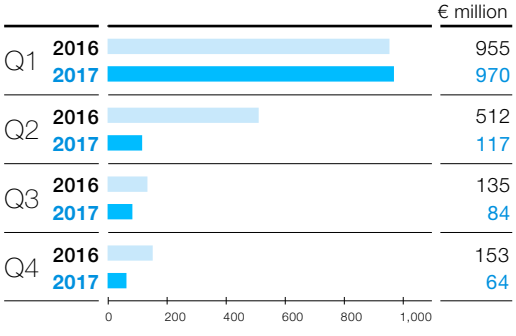
A 2.2.2-3/1

Crop Science Quarterly Sales



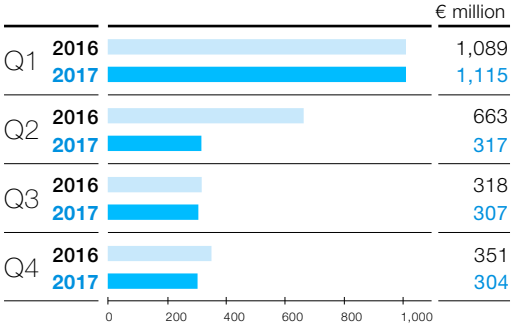
A 2.2.2-3/2

Crop Science Quarterly EBIT[1]



A 2.2.2-3/3

Crop Science Quarterly EBITDA before Special Items[1]



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

Animal Health

Slower market growth

The Animal Health market expanded by around 2% in 2017 (2016: 5%), with growth significantly lagging behind previous years. Alongside a difficult market environment in the farm animals business in Europe and North America, growth rates in the companion animals business, and in the important parasiticides market in particular, were also lower than in previous years. The slight recovery of the farm animals business in the core markets and an upturn in the American companion animals business at the end of the year were unable to offset the weaker market development in the first half of the year.

A 2.2.2/10

Key Data – Animal Health

			Change %[1]				Change %[1]	
€ million	Q4 2016	Q4 2017	Reported	Fx & p adj.	2016	2017	Reported	Fx & p adj.
Sales	**329**	**322**	**–2.1**	**+1.8**	**1,523**	**1,571**	**+3.2**	**+2.0**
Change in sales[1]								
Volume	–1.0%	+2.1%			+2.6%	+0.4%		
Price	+4.1%	–0.3%			+2.2%	+1.6%		
Currency	0.0%	–6.1%			–2.6%	–0.9%		
Portfolio	0.0%	+2.2%			0.0%	+2.1%		
			Reported	**Fx adj.**			**Reported**	**Fx adj.**
Sales by region								
Europe/Middle East/Africa	84	82	–2.4	–1.2	445	442	–0.7	0.0
North America	129	126	–2.3	+5.4	621	655	+5.5	+6.4
Asia/Pacific	79	79	.	+7.6	300	317	+5.7	+7.3
Latin America	37	35	–5.4	+2.7	157	157	0.0	0.0
EBITDA[1]	**34**	**28**	**–17.6**		**343**	**352**	**+2.6**	
Special items[1]	(4)	(21)			(6)	(29)		
EBITDA before special items[1]	**38**	**49**	**+28.9**		**349**	**381**	**+9.2**	
EBITDA margin before special items[1]	11.6%	15.2%			22.9%	24.3%		
EBIT[1]	**25**	**10**	**–60.0**		**313**	**307**	**–1.9**	
Special items[1]	(5)	(23)			(7)	(31)		
EBIT before special items[1]	**30**	**33**	**+10.0**		**320**	**338**	**+5.6**	
Net cash provided by operating activities	**85**	**75**	**–11.8**		**193**	**209**	**+8.3**	

Fx & p adj. = currency- and portfolio-adjusted; Fx adj. = currency-adjusted
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."

Sales growth driven by business in Asia/Pacific and the United States

Sales of Animal Health increased by 2.0% (Fx & portfolio adj.) to €1,571 million in 2017. Business in the Asia/Pacific region developed especially positively due to higher demand and price increases. We also registered currency-adjusted growth in North America, with the Cydectin™ product portfolio acquired in January 2017 from Boehringer Ingelheim Vetmedica, Inc., United States, contributing to sales gains. The Europe/Middle East/Africa and Latin America regions remained at the prior-year level.

A 2.2.2/11

Best-Selling Animal Health Products

€ million	Q4 2016	Q4 2017	Change % [1] Reported	Change % [1] Fx adj.	2016	2017	Change % [1] Reported	Change % [1] Fx adj.
Advantage™ product family	102	87	–14.7	–10.1	535	488	–8.8	–7.8
Seresto™	28	32	+14.3	+26.0	174	218	+25.3	+25.1
Drontal™ product family	31	30	–3.2	+2.3	128	132	+3.1	+4.5
Baytril™	34	31	–8.8	–0.6	113	113	0.0	+2.5
Total	**195**	**180**	**–7.7**	**–1.5**	**950**	**951**	**+0.1**	**+1.1**
Proportion of Animal Health sales	59%	56%			62%	61%		

Fx adj. = currency-adjusted
[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."

Sales by product

+25.1%
growth in sales of Seresto™ (Fx adj.)

- Sales of our **Advantage™** family of flea, tick and worm control products were down year on year, due mainly to increased competitive pressure and the related decline in demand in the Europe / Middle East / Africa and North America regions.
- We achieved continued strong growth with our **Seresto™** flea and tick collar that resulted chiefly from increased demand in the United States and Europe.
- Business with our **Drontal™** family of dewormers expanded once again. Here we benefited particularly from increased prices and volumes in the United States and the Asia / Pacific region.
- The increase in sales of our antibiotic **Baytril™** was largely attributable to the United States, partly due to a one-time effect in connection with a change in the distribution model, and to expanded volumes in Mexico.

Earnings

In 2017, we raised **EBITDA before special items** by 9.2% to €381 million. Adjusted for negative currency effects of €8 million, earnings increased by 11.5%. Price increases, the Cydectin™ business we acquired and lower selling expenses contributed to the growth in earnings. In contrast, negative contributions came from net other operating expenses as well as higher research and development expenses.

EBIT of Animal Health declined by 1.9% to €307 million, after special charges of €31 million (2016: €7 million) in conjunction with efficiency improvement measures.

A 2.2.2/12

Special Items[1] Animal Health

€ million	EBIT Q4 2016	EBIT Q4 2017	EBIT 2016	EBIT 2017	EBITDA Q4 2016	EBITDA Q4 2017	EBITDA 2016	EBITDA 2017
Restructuring	(5)	(23)	(7)	(31)	(4)	(21)	(6)	(29)
Total special items	**(5)**	**(23)**	**(7)**	**(31)**	**(4)**	**(21)**	**(6)**	**(29)**

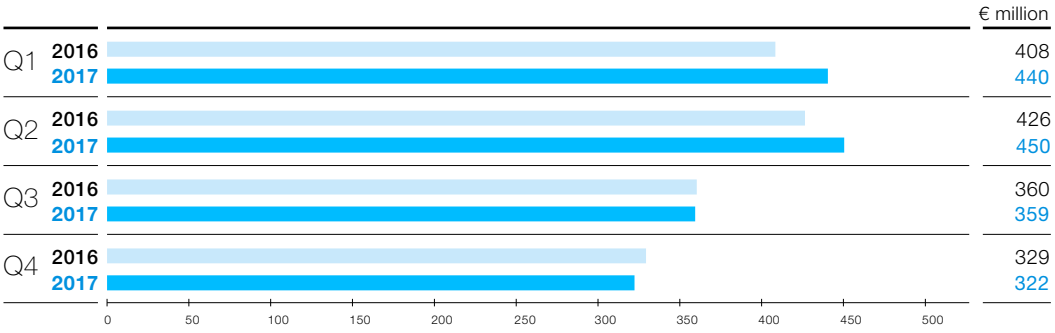
[1] For definition see Annual Report 2016, A 2.4 "Alternative Performance Measures Used by the Bayer Group."

Online Annex: A 2.2.2-4

The development of Animal Health in 2017 is shown in the following graphics (A 2.2.2-4/1, A 2.2.2-4/2 and A 2.2.2-4/3).

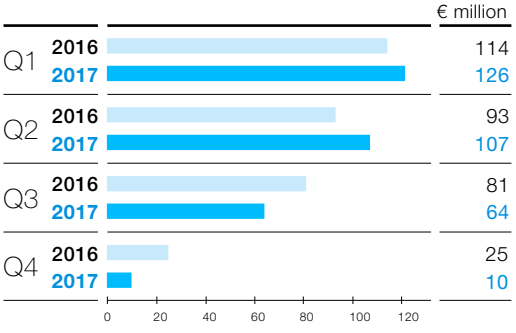
2.2.2-4/1

Animal Health Quarterly Sales



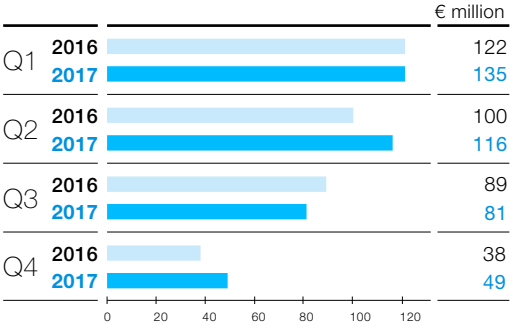
A 2.2.2-4/2

Animal Health Quarterly EBIT [1]



A 2.2.2-4/3

Animal Health Quarterly EBITDA before Special Items [1]



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

2.2.3 Value-Based Performance

ROCE – a value-based indicator

See also A 2.4

The ROCE (return on capital employed) indicates the capital return over a specified period. It is the ratio of net operating profit after tax (NOPAT) to the average capital employed. NOPAT is determined by deducting from EBIT the income taxes thereon, which are based on a historical average tax rate of 24%. The capital employed reflects the amount of capital used in the company’s operations. Based on carrying amounts, it is calculated by subtracting from operational assets the liability items that are largely non-interest-bearing, such as trade accounts payable, or would distort the operational capital base. To reflect the change in the capital employed during the year, an average figure is determined from the amounts at the end of the previous year and the end of the year under report. See also A 2.4 “Alternative Performance Measures Used by the Bayer Group” for a definition of capital employed.

The ROCE is compared to the weighted average cost of capital (WACC), which corresponds to the return expected by the providers of equity and debt. If the ROCE is in line with the WACC, the expected return for the period has been achieved. If it exceeds the WACC, return expectations have been exceeded, indicating that value has been created.

Calculating the cost of capital

The WACC is based on an after-tax approach and was calculated at the beginning of the year as the weighted average of the equity and debt cost factors. The cost of equity is the return expected by stockholders, computed from capital market information. The debt capital cost factor we use to calculate the WACC is based on the financing terms for ten-year Eurobonds issued by industrial companies with an "A–" credit rating. Historical capital market data is included in the data smoothing process to guarantee the necessary stability for internal management. The WACC for 2017 was 6.9% for the Bayer Group and the reporting segments. In impairment testing, by contrast, individual capital cost factors are used for the reporting segments which explicitly take account of segment-specific parameters (see "Basic principles, methods and critical accounting estimates" in the notes to the consolidated financial statements). However, these are not used for internal management, as they contain parameters relating to the closing date and therefore exhibit greater volatility than desired for internal management.

6.9%
Capital cost factor for the Bayer Group in 2017

Value-based business development

Bayer's ROCE in 2017 amounted to 10.8%, exceeding the cost of capital by 3.9 percentage points. It is thus an indicator for value creation. All segments except Consumer Health exceeded the WACC in 2017, although negative special items had a significant impact on the performance of all segments. Consumer Health's performance continued to be mainly influenced by the high level of capital employed as a result of the 2014 acquisition of the consumer care business of Merck & Co., Inc., United States.

ROCE in 2017 of
10.8%

See also A 2.2.2

A 2.2.3/1

Value-Based Performance by Segment

	Pharmaceuticals		Consumer Health		Crop Science		Animal Health		Group [1]	
€ million	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
EBIT	3,389	4,325	695	518	1,755	1,235	313	307	5,738	5,903
Income taxes [2]	(813)	(1,038)	(167)	(124)	(421)	(296)	(75)	(74)	(1,377)	(1,417)
NOPAT	2,576	3,287	528	394	1,334	939	238	233	4,361	4,486
Average capital employed	15,866	15,630	15,226	14,404	10,316	9,814	375	495	42,318	41,600
ROCE	16.2%	21.0%	3.5%	2.7%	12.9%	9.6%	63.5%	47.1%	10.3%	10.8%
WACC	7.5%	6.9%	7.5%	6.9%	7.5%	6.9%	7.5%	6.9%	7.5%	6.9%

2016 figures restated
[1] Including Reconciliation
[2] 24% on EBIT; based on historical average of tax rates

2.2.4 Asset and Financial Position of the Bayer Group

Financial management of the Group

The financial management of the Bayer Group is conducted by Bayer AG. Capital is a global resource, generally procured centrally and distributed within the 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
S&P Global Ratings	A–	A–2
Moody's	A3	P–2

These credit ratings reflect the company's high solvency and ensure access to a broad investor base for financing purposes. As a result of the planned acquisition of Monsanto, both S&P Global Ratings and Moody's are reviewing the possibility of a downgrade. Bayer continues to aim for an investment-grade credit rating after the successful closing of the Monsanto acquisition and is aiming for the single "A" rating category in the long term.

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.

See also A 3.2.2

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 Group policies.

Liquidity and Capital Expenditures of the Bayer Group

A 2.2.4/2

Bayer Group Summary Statements of Cash Flows

€ million	2016	2017	Change %
Net cash provided by (used in) operating activities, continuing operations	**6,435**	**6,611**	**+2.7**
Net cash provided by (used in) operating activities, discontinued operations	2,654	1,523	–42.6
Net cash provided by (used in) operating activities (total)	**9,089**	**8,134**	**–10.5**
Net cash provided by (used in) investing activities (total)	**(8,729)**	**(432)**	**+95.1**
Net cash provided by (used in) financing activities (total)	**(350)**	**(1,881)**	**.**
Change in cash and cash equivalents due to business activities	**10**	**5,821**	**.**
Cash and cash equivalents at beginning of period	**1,859**	**1,899**	**+2.2**
Change due to exchange rate movements and to changes in scope of consolidation	30	(139)	.
Cash and cash equivalents at end of period	**1,899**	**7,581**	.

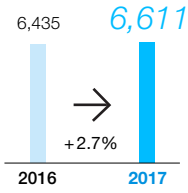
2016 figures restated

Net cash provided by operating activities

The net cash provided by operating activities in continuing operations increased by 2.7% to €6,611 million thanks to an improvement in EBIT and a reduction in cash tied up in working capital. This figure included the components of the payments received from DOW Chemical as part of a patent dispute that fall under operating activities. By contrast, the net cash provided by operating activities (total) decreased by 10.5% to €8,134 million as the prior-year figure included inflows from the sale of the Diabetes Care business.

A 2.2.4/3

Cash Inflows from Operating Activities (from Continuing Operations)
€ million



Net cash used in investing activities

The net cash outflow for investing activities in 2017 amounted to €432 million. Cash outflows for property, plant and equipment and intangible assets were 8.2% lower at €2,366 million (2016: €2,578 million) and included €915 million (2016: €835 million) at Pharmaceuticals, €178 million (2016: €215 million) at Consumer Health, €553 million (2016: €757 million) at Crop Science, €38 million (2016: €37 million) at Animal Health and €283 million (2016: €415 million) at Covestro. Divestments resulted in a net inflow of €453 million. This includes the proceeds of €999 million from the sale of Covestro shares on September 29, 2017, which, together with the control termination agreement, led to the de facto loss of control, less the Covestro cash and cash equivalents of €637 million deducted as a consequence. Cash outflows for acquisitions in the amount of €158 million related to the acquisition of the Cydectin™ product portfolio in the United States in the Animal Health segment. Net cash inflows from current and noncurrent financial assets totaled €1,230 million (2016: net outflows totaling €6,335 million).

See also A 1.4.2.2

Net cash used in financing activities

In 2017, there was a net cash outflow of €1,881 million for financing activities, including net loan repayments of €2,479 million (2016: €730 million). Net interest payments were 7.8% lower at €732 million (2016: €794 million). The cash outflow for dividends amounted to €2,364 million (2016: €2,126 million).

A net inflow of €3,717 million came from the sale of Covestro shares before the de facto loss of control. In the previous year, the net cash inflow from the issuance of mandatory convertible notes amounted to €3,952 million, reported as a €3,300 million capital contribution and a €652 million borrowing.

Liquid assets and net financial debt

See also A 2.4

A 2.2.4/4

Net Financial Debt[1]

€ million	Dec. 31, 2016	Dec. 31, 2017	Change (%)
Bonds and notes / promissory notes	15,991	12,436	– 22.2
of which hybrid bonds[2]	4,529	4,533	+ 0.1
Liabilities to banks	1,837	534	– 70.9
Liabilities under finance leases	436	238	– 45.4
Liabilities from derivatives[3]	587	240	– 59.1
Other financial liabilities	730	970	+ 32.9
Receivables from derivatives[3]	(313)	(244)	– 22.0
Financial debt	**19,268**	**14,174**	**– 26.4**
Cash and cash equivalents	(1,899)	(7,581)	.
Current financial assets[4]	(5,591)	(2,998)	– 46.4
Net financial debt	**11,778**	**3,595**	**– 69.5**

[1] For definition see A 2.4 "Alternative Performance Measures Used by the Bayer Group."
[2] Classified as debt according to IFRS
[3] These include the market values of interest-rate and currency hedges of recorded transactions.
[4] These include short-term loans and receivables with maturities between 3 and 12 months outstanding from banks and other companies as well as available-for-sale financial assets that were recorded as current on first-time recognition.

Net financial debt of the Bayer Group declined by €8,183 million in 2017, due mainly to cash inflows from operating activities and from the sale of Covestro shares. A further reduction in net financial debt resulted from the derecognition of financial liabilities and financial assets in connection with the deconsolidation of Covestro.

Net financial debt includes three subordinated hybrid bonds with a total volume of €4,533 million, 50% of which is treated as equity by Moody's and S&P Global Ratings. The hybrid bonds thus have a more limited effect on the Group's rating-specific debt indicators than senior debt.

In May 2017, Bayer Holding Ltd., Japan, issued two bonds with a volume of JPY 10 billion each. In addition, in June 2017, Bayer AG issued debt instruments (exchangeable bond) with a nominal value of €1.0 billion, which mature in 2020. These can be repaid in cash, Covestro shares or a combination of the two. The annual coupon is 0.05%. During 2017, five bonds totaling around €2 billion were redeemed at maturity. In October 2017, one bond with a nominal value of €750 million maturing in 2018 was redeemed early.

The decline in liabilities to banks mainly resulted from early repayment of a US$900 million bank loan taken out to finance the acquisition of the Merck OTC business.

The other financial liabilities as of December 31, 2017, contained €525 million related to the mandatory convertible notes issued in November 2016 and €292 million in commercial paper.

Asset and Capital Structure of the Bayer Group

A 2.2.4/5

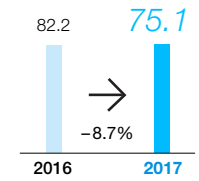
Bayer Group Summary Statements of Financial Position

€ million	Dec. 31, 2016	Dec. 31, 2017	Change %
Noncurrent assets	**51,791**	**45,014**	**–13.1**
Assets held for sale	10	2,081	.
Other current assets	30,437	27,992	–8.0
Current assets	**30,447**	**30,073**	**–1.2**
Total assets	**82,238**	**75,087**	**–8.7**
Equity	**31,897**	**36,861**	**+15.6**
Noncurrent liabilities	31,804	24,633	–22.5
Current liabilities	18,537	13,482	–27.3
Liabilities directly related to assets held for sale	.	111	.
Total current liabilities	**18,537**	**13,593**	**–26.7**
Liabilities	**50,341**	**38,226**	**–24.1**
Total equity and liabilities	**82,238**	**75,087**	**–8.7**

Substantial increase in equity, while total assets decline

A 2.2.4/6

Total Assets
€ billion



Total assets as of December 31, 2017, declined by €7.2 billion to €75.1 billion, mainly as a result of the deconsolidation of Covestro. As part of that deconsolidation, assets of €11.2 billion were derecognized in the respective line items in the statements of financial position. At the same time, the remaining investment in the Covestro Group was recognized at its fair value of €3.6 billion. Noncurrent assets decreased by €6.8 billion to €45.0 billion. Total current assets declined by €0.4 billion to €30.1 billion. The assets held for sale in connection with the planned acquisition of Monsanto increased by €2.1 billion.

Equity rose by €5.0 billion compared with December 31, 2016, to €36.9 billion. The income after income taxes of €8.1 billion had a positive effect. Currency effects recognized outside profit and loss reduced equity by €2.2 billion, and the dividend payment by Bayer AG also reduced equity by €2.2 billion. An increase of €0.7 billion – recognized outside profit or loss – came from the reduction in post-employment benefit obligations. Effects of the reduction in the interest in Covestro recognized directly in equity and the deconsolidation of this company increased equity by €0.7 billion. The equity ratio (equity coverage of total assets) as of December 31, 2017, was 49.1% (2016: 38.8%).

Liabilities as of December 31, 2017, decreased by €12.1 billion to €38.2 billion. As part of the deconsolidation of Covestro, liabilities of €6.0 billion were derecognized in the corresponding line items in the statements of financial position. Provisions for pensions and other post-employment benefits decreased to €8.0 billion, with €1.2 billion of this due to the deconsolidation of Covestro, a further €1.2 billion to actuarial gains and €0.5 billion to the transfer of Covestro shares to Bayer Pension Trust e.V. Financial liabilities declined by €5.2 billion to €14.4 billion, with a reduction of €1.8 billion due to the deconsolidation of Covestro.

2.3 Earnings; Asset and Financial Position of Bayer AG

Bayer AG performs important management functions for the Group.

Business lease agreements between Bayer AG on the one hand, and Bayer Pharma AG and Bayer CropScience AG – the former parent companies of the respective divisions – on the other, have been in place since the start of 2017 and govern the transfer of their operational business to Bayer AG. As a result, the business of Bayer AG – previously confined to a holding company function – has expanded considerably and now also comprises the parent company functions of the two divisions. A comparison between the financial statements for 2017 and those of the previous year is therefore only possible to a limited extent. The financial statements of Bayer AG are prepared in accordance with the German Commercial Code (HGB), Stock Corporation Act (AktG) and German Energy Act (EnWG).

Bayer AG supplies third parties with electricity and gas at individual facilities. In accordance with Section 3, No. 18 of the German Energy Act (EnWG), it is therefore classified as an energy provider within the meaning of the EnWG. Furthermore, as the vertically integrated energy provider Currenta GmbH & Co. OHG is a subsidiary of Bayer AG, Bayer AG is classed as a vertically integrated energy provider pursuant to Section 3, No. 38 of the EnWG.

2.3.1 Earnings Performance of Bayer AG

A 2.3.1/1

Bayer AG Summary Income Statements according to the German Commercial Code

€ million	2016	2017
Net sales	390	14,730
Cost of goods sold	(353)	(7,914)
Gross profit	**37**	**6,816**
Selling expenses	(39)	(3,898)
Research and development expenses	(46)	(2,186)
General administration expenses	(666)	(908)
Other operating income	48	85
Other operating expenses	(227)	(102)
Operating income	**(893)**	**(193)**
Income from investments in affiliated companies – net	4,647	5,794
Interest income / expense – net	54	(369)
Other financial income / expense - net	163	(354)
Nonoperating income	**4,864**	**5,071**
Income taxes	(371)	(335)
Income after taxes / net income	**3,600**	**4,543**
Allocation to other retained earnings	(1,367)	(1,643)
Distributable profit	**2,233**	**2,900**

Rise in earnings due to higher income from investments in affiliated companies

The assumption of the operational business of Bayer Pharma AG and Bayer CropScience AG resulted in a significant increase in sales of Bayer AG, from €0.4 billion to €14.7 billion. Of this increase, Pharmaceuticals accounted for €8.5 billion and Crop Science for €6.1 billion.

Sales of Pharmaceuticals declined by €0.3 billion compared with the figure of €8.8 billion posted in the previous year by the predecessor company. Sales of our anticoagulant Xarelto™ increased by €234 million, compared with declines of €194 million for Aspirin™ Cardio, €190 million for our multiple sclerosis treatment Betaferon™ / Betaseron™, €53 million for Levitra™ and €48 million for the MRI contrast agent Gadavist™ / Gadovist™. Of the total sales of Pharmaceuticals, business with Group companies accounted for 90% and business with third parties for 10%.

Sales of Crop Science declined by €0.4 billion compared with the figure of €6.5 billion posted in the previous year by Bayer CropScience AG. The declines pertained to nearly all units. Sales moved back by €245 million at Insecticides, by €209 million at Fungicides and by €150 million at Herbicides. Latin America was responsible for the decline in sales, with business in that region shrinking by €0.6 billion as the high inventories in Brazil had a negative effect. The ratio of sales between Group companies and those to third parties at Crop Science was 96% to 4%.

After deducting the cost of goods sold of €7.9 billion from sales, gross profit was €6.8 billion, or 46% of sales. The gross margin was 58% at Pharmaceuticals and 34% at Crop Science. Selling expenses of €3.9 billion mainly comprised €3.3 billion in royalties, €2.7 billion of which was paid to Bayer Intellectual Property GmbH for the use of patents, trademarks and other intellectual property. Research and development expenses increased from €46 million in the previous year to €2.2 billion in 2017 due to the expansion of business, with €1.5 billion attributable to Pharmaceuticals and €0.5 billion to Crop Science. The €0.2 billion increase in administration expenses to €0.9 billion also resulted from the transfer of business. Other operating expenses, net of other operating income, decreased by €162 million to €17 million. In the previous year, expenses of €198 million were incurred for the first-time recognition by Bayer AG of provisions for impending losses from sales and licensing agreements transferred to Bayer AG effective January 1, 2017, with the businesses leased from Bayer Pharma AG and Bayer CropScience AG.

The operating loss at Bayer AG declined by €700 million, from €893 million in the previous year to €193 million in 2017.

Income from investments in affiliated companies increased by €1,147 million to €5,794 million. The significant improvement was due particularly to proceeds of €2,720 million (2016: €79 million) from the sale of shares in Covestro AG. The dividends and similar income from subsidiaries also increased year on year, moving forward by €490 million to €819 million (2016: €329 million). The profit distribution of Bayer Hispania, S.L., Spain, (€591 million; 2016: €62 million) and Covestro AG (€146 million; 2016: €91 million) played a particularly important role here. Profit transfers declined from €4,188 million in the previous year to €2,245 million in 2017. This decline was mainly attributable to the removal of Bayer CropScience AG from the fiscal unity; that company had transferred profits of €1,017 million in the previous year. Earnings of Bayer Pharma AG were also down significantly at €2,248 million (2016: €3,011 million) and now result mainly from income from subsidiaries and the business lease. Significant effects of profit-and-loss transfer agreements were the transfer of income of €130 million (2016: loss of €19 million) from Bayer Real Estate GmbH due to income from subsidiaries and income of €94 million (2016: €204 million) from Siebte Bayer VV GmbH, which receives regular dividend income from a U.S. subsidiary that handles export business in the United States for Bayer Health Care LLC. Due partly to project costs, Bayer Business Services GmbH reported a much higher loss of €201 million (2016: €50 million), which was offset by Bayer AG.

Net interest expense was €369 million, after net interest income of €54 million in the previous year. The interest portion of the allocation to provisions for pensions and other post-employment benefits and the valuation of the fund assets resulted in a net gain of €174 million, which was €129 million below the prior-year figure (2016: €303 million). This decline resulted mainly from interest-related actuarial losses, after gains in the previous year due to the change in the method for determining the discount rate.

Of the remaining €543 million (2016: €249 million) balance of interest expenses and income, €297 million (2016: €196 million) was attributable to third parties, with the creditors of the bonds and commercial paper programs accounting for €186 million (2016: €189 million), €109 million (2016: 25 million) to interest-rate swaps and options, and €246 million (2016: €53 million) to Group companies. The higher expense in the Group resulted chiefly from a corresponding increase in intra-Group debt.

Other financial income and expenses yielded a negative balance of €354 million in 2017 after a positive balance of €163 million in the previous year. This decline of €517 million was mainly attributable to a difference of €391 million in income / losses from currency translation (minus €212 million; 2016: plus €179 million), and to an increase of €164 million in expenses for credit facilities. The latter accounted for expenses of €221 million (2016: €57 million), of which €210 million was related to the financing of the planned acquisition of Monsanto. The absence in 2017 of the pre-payment penalty of €31 million incurred in the previous year for early repayment of an intra-Group loan had a positive impact on earnings. Income from other subsidiaries to cover pension expenses for retirees remaining with Bayer AG following the hive-down of the operating business in 2002 and 2003 amounted to €115 million (2016: €4 million). This increase corresponds to a rise in pension expenses, the interest portion of which was reflected in interest expense, while the remainder of €41 million was reflected in other financial income and expenses (2016: income of €56 million).

Income before income taxes greatly exceeded the prior-year level at €4,878 million (2016: €3,971 million). Tax expense nonetheless declined from €371 million to €335 million due to higher tax-free income from investments in affiliated companies and divestiture proceeds. After deduction of taxes, net income was €4,543 million (2016: €3,600 million). An allocation of €1,643 million was made to other retained earnings, giving a distributable profit of €2,900 million.

Distributable profit of
€2,900 million

The Board of Management and Supervisory Board will propose to the Annual Stockholders' Meeting on May 25, 2018, that the distributable profit be used to pay a dividend of €2.80 per share on the capital stock entitled to the dividend for 2017 and that the remaining portion be carried forward.

2.3.2 Asset and Financial Position of Bayer AG

A 2.3.2/1

Bayer AG Summary Statements of Financial Position according to the German Commercial Code

€ million	Dec. 31, 2016	Dec. 31, 2017
ASSETS		
Noncurrent assets		
Intangible assets, property, plant and equipment	58	152
Financial assets	49,112	47,071
	49,170	47,223
Current assets		
Inventories	3	2,109
Trade accounts receivable	77	2,002
Receivables from subsidiaries	4,092	2,585
Other assets and deferred charges	776	901
Cash and cash equivalents, marketable securities	2,728	4,272
	7,676	11,869
Total assets	**56,846**	**59,092**
EQUITY AND LIABILITIES		
Equity	**16,565**	**18,875**
Provisions	**1,905**	**2,201**
Other liabilities		
Bonds and notes, liabilities to banks	6,673	7,618
Trade accounts payable	86	1,750
Payables to subsidiaries	31,197	28,078
Remaining liabilities and deferred income	420	570
	38,376	38,016
Total equity and liabilities	**56,846**	**59,092**

2016 figures restated

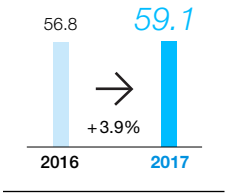
Total assets increased due to the integration of the Pharmaceuticals and Crop Science businesses

See also A 2.3.2/1

The asset and liability structure of Bayer AG is dominated by the management functions for the Bayer Group, even following the integration of the parent company functions of the Pharmaceuticals and Crop Science divisions. The financial position is shaped particularly by the management of subsidiaries and the financing of corporate activities. This is primarily reflected in the high level of investments in affiliated companies and of the receivables from, and payables to, Group companies.

A 2.3.2/2

Total Assets
€ billion



Total assets of Bayer AG rose by €2.2 billion in 2017 to €59.1 billion, due particularly to the assumption of the operational business of the Pharmaceuticals and Crop Science divisions from Bayer Pharma AG and Bayer CropScience AG, respectively, which led especially to an increase in current assets of €4.2 billion. Noncurrent assets declined by €1.9 billion.

The decline in noncurrent assets resulted almost exclusively from the divestment of shares in Covestro AG (€1.9 billion) and their placement into Bayer Pension Trust e.V. (€0.2 billion), respectively. Investments in affiliated companies declined by €2.0 billion overall, but continued to account for by far the largest item in total assets, amounting to €46.2 billion or 78.2% (2016: 84.9%). The value of other financial assets and property, plant and equipment remained unchanged at €0.9 billion and €29 million, respectively, while intangible assets increased by €0.1 billion to €123 million.

Due to the transfer and integration of the Pharmaceuticals and Crop Science businesses, substantial inventories and customer receivables of €2.1 billion (2016: €0.0 billion) and €2.0 billion (2016: €0.1 billion), respectively, were recognized for the first time in current assets. The latter mainly comprised €1.6 billion (2016: €0.1 billion) from subsidiaries. Receivables from subsidiaries amounted to €2.6 billion (2016: €4.1 billion) and accounted for 4.4% of total assets. The other receivables reflected in current assets (including deferred charges) increased by €125 million to €901 million; this total includes €284 million in shares of Covestro AG divested to banks while retaining exposure to economic risks and opportunities. Cash and cash equivalents in the form of higher bank deposits increased by €1.5 billion to €4.3 billion.

Bayer AG had equity of €18.9 billion (2016: €16.6 billion). The increase represents the excess of the €4,543 million net income for 2017 over the €2,233 million dividend payment for 2016. The equity ratio increased to 31.9% (2016: 29.1%) due to the less substantial growth in total assets.

Provisions increased by €0.3 billion to €2.2 billion. Among the items transferred to Bayer AG in connection with the assumption of the operational business of Pharmaceuticals and Crop Science and the corresponding transfers of undertaking were pension obligations of €1.0 billion and fund assets of €0.4 billion, as well as net defined benefit liability of €0.6 billion. Nevertheless, pension obligations declined by €162 million due to the increase in the value of fund assets and additional contributions. Provisions for taxes also decreased, falling by €150 million to €391 million, while miscellaneous provisions rose by €608 million to €1,075 million. The main factors here were a €319 million increase in personnel commitments, which was attributable particularly to the increase in the size of the workforce, and a €220 million increase in impending losses, especially from hedging transactions.

Other liabilities (including deferred income) edged back by €0.4 billion to €38.0 billion (net of deductible receivables). Due to the assumed Pharmaceuticals and Crop Science businesses, significant trade accounts payable of €1.8 billion accumulated for the first time, while other operating liabilities declined by €1.7 billion. Financial debt was paid down by €0.5 billion, with a €1.5 billion decline in intra-Group debt being partly offset by a €1.0 billion increase in external financial debt. A €750 million DIP bond maturing in 2018 was early redeemed in 2017, while €1 billion in debt instruments (exchangeable bonds) that can also be paid in Covestro shares were newly issued. Liabilities to banks and other third parties increased by €0.7 billion and €0.1 billion, respectively. Total financial debt at year end 2017 was €36.0 billion (2016: €36.5 billion). After deduction of cash and cash equivalents of €4.3 billion (2016: €2.7 billion), net debt fell by €2.1 billion to €31.7 billion (2016: €33.8 billion).

2.4 Alternative Performance Measures Used by the Bayer Group

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

The Combined Management Report and the consolidated financial statements of the Bayer Group are prepared according to the applicable financial reporting standards. In addition to the disclosures and metrics required by these standards, 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 determines APMs to enable the comparison of performance indicators over time and against those of other companies in its industry sector. These APMs are calculated by making certain adjustments to items in the statement of financial position or the income statement prepared according to the applicable financial reporting standards. Such adjustments may result from differences in calculation or measurement methods, nonuniform business activities or special factors affecting the information value of these items. The APMs determined in this way apply to all periods and are used both internally for business management purposes and externally by analysts, investors and rating agencies to assess the company's performance. Bayer determines the following APMs:

- Change in sales (reported, currency-adjusted, currency- and portfolio-adjusted)
- EBIT
- EBITDA
- EBIT before special items
- EBITDA before special items
- EBITDA margin before special items
- Core earnings per share
- Net financial debt
- Return on capital employed (ROCE)
- Net operating profit after tax (NOPAT)
- Capital employed
- Total operating performance
- Value creation
- Cost of materials / other expenses
- Other balance sheet and financial indicators

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 disregarding the acquisitions and divestments material to each business entity. Exchange rate effects are generally calculated on the basis of the functional currency valid in the respective country. Exceptions exist in Brazil and Argentina, primarily at Crop Protection, where the respective functional currencies are restated in U.S. dollars for business reasons.

EBIT (earnings before interest and taxes) serves to present a company's operating result while eliminating the effects of differences among local taxation systems and different financing activities. EBIT is calculated as follows:

A 2.4/1

Reconciliation to EBIT	
Income before income taxes	
+/–	Financial result (net income / loss from investments accounted for using the equity method, financial income and expenses)
=	**EBIT**

EBITDA stands for earnings before interest, taxes, depreciation and amortization. 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.

A 2.4/2

Reconciliation to EBITDA	
EBIT	
+/–	Depreciation and amortization / impairment losses / impairment loss reversals on property, plant, equipment and intangible assets (as per Statements of Cash Flows)
=	**EBITDA**

EBIT before special items and **EBITDA before special items** show the development of the operational business irrespective of the effects of special items, i.e. special effects for the company with regard to their nature and magnitude. These may include 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 performance. It is the ratio of EBITDA before special items to net sales.

Core earnings per share (core EPS) is an APM based on the **earnings per share (EPS) for the Group** as defined in IAS 33. Core earnings per share are determined by neutralizing the effects of special items to enable a comparison of performance over time. In an intermediate step, further APMs – **core EBIT** and **core net income** – are calculated. Core earnings per share are then calculated by dividing core net income per share by the weighted average number of shares.

See also A 2.2.1

A 2.4/3

Reconciliation to Core Earnings per Share	
EBIT (as per Income Statements)	
+/–	Amortization / impairment losses / impairment loss reversals on intangible assets
+/–	Impairment losses / impairment loss reversals on property, plant and equipment, and accelerated depreciation included in special items
+/–	Special items (other than accelerated depreciation, amortization and impairment losses / loss reversals)
=	**Core EBIT**
+/–	Financial result (as per Income Statements)
+/–	Special items in the financial result
+/–	Income taxes (as per Income Statements)
+/–	Special items in income taxes
+/–	Tax effects relating amortization / impairment losses / impairment loss reversals and special items
+/–	Income after income taxes attributable to noncontrolling interest (as per Income Statements)
+/–	Portion of the above-mentioned adjustments attributable to noncontrolling interest
=	**Core earnings from continuing operations**
/	Weighted average number of shares
=	**Core earnings per share from continuing operations (Core EPS)**

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

Core earnings per share form the basis of the Bayer Group's dividend policy.

See also A 2.2.4

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. This metric is calculated as follows:

A 2.4/4

Reconciliation to Net Financial Debt	
Bonds and notes / promissory notes	
+ Liabilities to banks	
+ Liabilities under finance leases	
+ Liabilities from derivatives [1]	
+ Other financial liabilities	
- Receivables from derivatives [1]	
= Financial liabilities	
– Cash and cash equivalents	
– Current financial assets [2]	
= Net financial debt	

[1] These include the market values of interest-rate and currency hedges of recorded transactions
[2] These include short-term loans and receivables with maturities between 3 and 12 months outstanding from banks and other companies as well as available-for-sale financial assets that were recorded as current on initial recognition.

The **return on capital employed (ROCE)** is the ratio of **net operating profit after tax (NOPAT)** to the average **capital employed**. It is a value-oriented indicator used in long-term business and portfolio analyses. NOPAT represents the operating result after taxes and is calculated by subtracting income taxes from EBIT. Income taxes are calculated by multiplying EBIT by a uniform tax rate of 24%, which is based on a historical average of tax rates. 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 or would distort the capital base. In addition to the items reported in the previous fiscal year, "assets held for sale" and "liabilities directly related to assets held for sale" are included in capital employed because these items contributed to EBIT in the fiscal year. 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 year. The components of the capital employed are as follows:

A 2.4/5

Components of Capital Employed

€ million	Dec. 31, 2016	Dec. 31, 2017
Goodwill	16,048	14,751
Other intangible assets	13,470	11,674
Property, plant and equipment	8,475	7,633
Other financial assets [1]	49	47
Inventories	6,687	6,550
Trade accounts receivable	9,319	8,582
Other receivables [1]	1,367	1,293
Deferred tax assets [1]	2,591	2,371
Claims for income tax refunds	676	474
Assets held for sale	10	2,081
Gross capital employed	**58,692**	**55,456**
Other provisions [1]	(6,154)	(5,602)
Trade accounts payable	(4,991)	(5,129)
Other liabilities [1]	(2,488)	(2,093)
Financial liabilities [1]	–	(4)
Deferred tax liabilities [1]	(1,242)	(910)
Income tax liabilities	(1,307)	(917)
Liabilities directly related to assets held for sale	–	(111)
Capital employed	**42,510**	**40,690**
Average capital employed in 2017	–	**41,600**

2016 figures restated
[1] Selected items of the component: nonoperative or non-interest-bearing items eliminated within capital employed

The **total operating performance** is the sum of net sales, other operating income, financial income and the net income / loss from investments accounted for using the equity method. It is divided between depreciation, amortization, impairment losses and impairment loss reversals, the cost of materials / other expenses and value added. **Value added** is defined as the sum of EBIT plus personnel expenses and tax expenses not related to income taxes, and the financial result plus interest expense. The **cost of materials / other expenses** includes all expenses except depreciation, amortization, impairment losses and impairment loss reversals as well as those incorporated in the value added.

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] 2017	Growth forecast[1] 2018
World	+3.2%	+3.3%
European Union	+2.5%	+2.2%
of which Germany	+2.6%	+2.8%
United States	+2.2%	+2.7%
Emerging Markets[2]	+4.8%	+4.8%

Growth 2017 restated
[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 February 2018

Global economic growth remains strong

The global economy should continue to grow strongly in 2018. In the United States, particularly, we expect higher momentum than in 2017. Among other things, the recent tax cuts should provide economic impetus, and unemployment should also decline, reinforcing consumer spending. Robust growth can also be expected in Europe, although it is likely to be slightly lower than in 2017. The economy is still being hampered by political uncertainty, including the wrangling about what form the United Kingdom's exit from the European Union should take. By contrast, a further reduction in unemployment should have a positive impact. In the Emerging Markets, we anticipate strong growth on the same level as in the previous year. As the global economy remains in good shape, growth in these countries should be driven principally by exports. We expect strong growth in China but at a slightly slower pace than in 2017.

A 3.1.1/2

Economic Outlook for the Segments

	Growth[1] 2017	Growth forecast[1] 2018
Pharmaceuticals market	+3%	+4%
Consumer health market	+3–4%	+3–4%
Seeds and crop protection market	+1%	+3%
Animal health market	+2%	+4%

[1] Bayer's estimate, except pharmaceuticals. Source for pharmaceuticals market: IMS Health. IMS Market Prognosis. Copyright 2017. All rights reserved; currency-adjusted; 2017 data provisional
As of February 2018

We anticipate that the **pharmaceuticals market** will post slightly higher growth in 2018 (4%) than in 2017. The main growth drivers are likely to be new product launches. The expiration of patents is expected to have a negative impact as it could result in increased competition from generics. We see a positive development in the United States, Europe, Latin America and Asia, but slower growth in the Japanese pharmaceuticals market.

As regards the **consumer health market**, we anticipate growth of 3 to 4% in 2018. The market is likely to remain tight as a result of rising price pressure from e-commerce and consolidation of the retail sector.

The global **seed and crop protection market** should develop positively in 2018 (+3%). In our view, the principal growth momentum will come from Latin America, mainly due to the expected normalization of inventories of crop protection products in Brazil and a further increase in soybean acreages. We also expect the market to grow in the Asia/Pacific region and in Eastern Europe. The persistently low price of agricultural commodities in North America and Western Europe is likely to be reflected in sluggish growth, which will lag behind the overall global development.

Following a slight upturn in the **animal health market** at the end of 2017, we expect growth to pick up compared with 2017 to 4% in 2018. The main factors here are likely to be an improvement in market conditions in the farm animals sector, along with further robust demand in the companion animals business.

3.1.2 Corporate Outlook

The following forecast is based on the current business development and our internal planning. The planned acquisition of Monsanto is not yet included in this forecast and is dealt with separately below.

Our forecast is based on the exchange rates as of December 31, 2017. To enhance the comparability of operating performance, the forecasts are also adjusted for currency effects[1]. A 1% appreciation (depreciation) of the euro against all other currencies would decrease (increase) sales on an annual basis by some €250 million and EBITDA before special items by about €70 million.

For 2018, we expect sales of around €35 billion. This corresponds to a low- to mid-single-digit percentage increase on a currency- and portfolio-adjusted basis. EBITDA before special items is expected to match the prior-year level (currency-adjusted: increase by a mid-single-digit percentage). Core earnings per share from continuing operations are expected to come in at the prior-year level (currency-adjusted: increase by a mid-single-digit percentage).

A 3.1.2/1

Forecast for Key Financial Data of the Group for 2018

	Closing rates on Dec. 31, 2017	Currency-adjusted
Sales	Prior-year level	Increase by a low- to mid-single-digit percentage
Development of EBITDA before special items	Prior-year level	Increase by a mid-single-digit percentage
Development of core earnings per share	Prior-year level	Increase by a mid-single-digit percentage

Sales and earnings forecast by segment

For **Pharmaceuticals**, we plan to generate sales of more than €16.5 billion, taking into account product supply constraints out of the Leverkusen Supply Center. This corresponds to a low-single-digit percentage increase on a currency- and portfolio-adjusted basis. We aim to raise sales of our key growth products Xarelto™, Eylea™, Stivarga™, Xofigo™ and Adempas™ towards €7 billion. We expect EBITDA before special items to decline by a low-single-digit percentage (currency-adjusted: increase by a low-single-digit percentage), and anticipate a slight decline in the EBITDA margin before special items.

[1] The average monthly exchange rates from 2017 (see B 4/1) were applied.

In the **Consumer Health** segment, we expect sales of more than €5.5 billion, which would be at the prior-year level on a currency- and portfolio adjusted basis. We expect EBITDA before special items to decline by a low-single-digit percentage (currency-adjusted: increase by a low-single-digit percentage).

For **Crop Science**, we see sales coming in at more than €9.5 billion. This corresponds to a mid-single-digit percentage increase on a currency- and portfolio-adjusted basis. We expect to increase EBITDA before special items by a mid- to high-single-digit percentage (currency-adjusted: mid-teens percentage increase).

See also B 3 for the effects of IFRS 15

In the **Animal Health** segment, we expect a currency- and portfolio-adjusted increase in sales by a low-single-digit percentage. We expect EBITDA before special items to decline by a mid-single-digit percentage (currency-adjusted: at the prior-year level). Both sales and EBITDA before special items are negatively impacted by revised financial reporting standards (IFRS 15).

Reconciliation: We expect sales of around €1.5 billion in 2018. We plan EBITDA before special items in the region of minus €0.2 billion.

A 3.1.2/2

Forecast for Other Key Data of the Group for 2018

	Closing rates on Dec. 31, 2017
Special charges [1]	around €0.4 billion
Research and development expenses	around €4.1 billion
Capital expenditures	around €2.2 billion
of which for intangible assets	around €0.6 billion
Depreciation and amortization	around €2.2 billion
of which on intangible assets	around €1.2 billion
Financial result	around minus €1 billion
Effective tax rate	20.0%
Net financial debt [2]	Net liquidity position

[1] Mainly comprising costs in connection with the planned acquisition of Monsanto until closing, restructuring measures and efficiency improvement programs
[2] Excluding capital and portfolio measures

Outlook including Monsanto

Through the expected acquisition in the second quarter of 2018, we anticipate a significant increase in sales and EBITDA before special items. Based on current assumptions about the equity and financing measures to be undertaken, we expect a moderate decline in core earnings per share. For the first full year following the acquisition, we continue to expect a significant increase in sales and EBITDA before special items, and an increase in core earnings per share.

Outlook for Bayer AG

See also A 1.1.2

For Bayer AG we expect sales of approximately €15 billion and EBIT in the region of minus €1.5 billion. Bayer AG comprises both its own operational business and that assumed from Bayer Pharma AG and Bayer CropScience AG through business leases. In addition, the earnings of most major Bayer subsidiaries in Germany are transferred directly to Bayer AG under profit and loss transfer agreements. Also, specific intra-company 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, based on these factors, we expect Bayer AG to report a distributable profit that will again enable our stockholders to adequately participate in the Bayer Group's earnings.

3.2 Opportunity and Risk Report

3.2.1 Group-wide Opportunity and Risk Management System

As a global life science enterprise, the Bayer Group is constantly exposed to a wide range of internal or 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.

Following the deconsolidation of Covestro at the end of the third quarter of 2017, the opportunity and risk management of Covestro is no longer analyzed. The operational risks of Covestro are no longer part of Bayer's risk profile.

Opportunity management system

We identify opportunities as part of the annual strategic planning cycle, during which the segments analyze internal and external factors that may positively affect the development of our business. These may be factors of a social, economic or environmental nature. The core phase of our strategic planning process normally takes place in the first half of the year and starts with a comprehensive analysis of the markets. The segments build on this by analyzing their respective market environments to identify their opportunities. They base these analyses on different time periods to take into account the fact that trends or developments may impact our business over the short, medium or long term. In addition, opportunities are identified by the management and employees through daily observation of internal processes and markets. We have already taken account in our planning of opportunities that we believe are highly probable to materialize.

Risk management system

In connection with the reorganization of the Bayer Group initiated at the beginning of 2016, coordination of risk management activities was combined within the Risk Management function, which reports directly to the Chief Financial Officer, and the risk management system was comprehensively and extensively realigned. This realignment involved, among other things, the adjustment of the risk management process – Enterprise Risk Management (ERM) process – to include a revised risk catalogue (Bayer Risk Universe) and a modified assessment system.

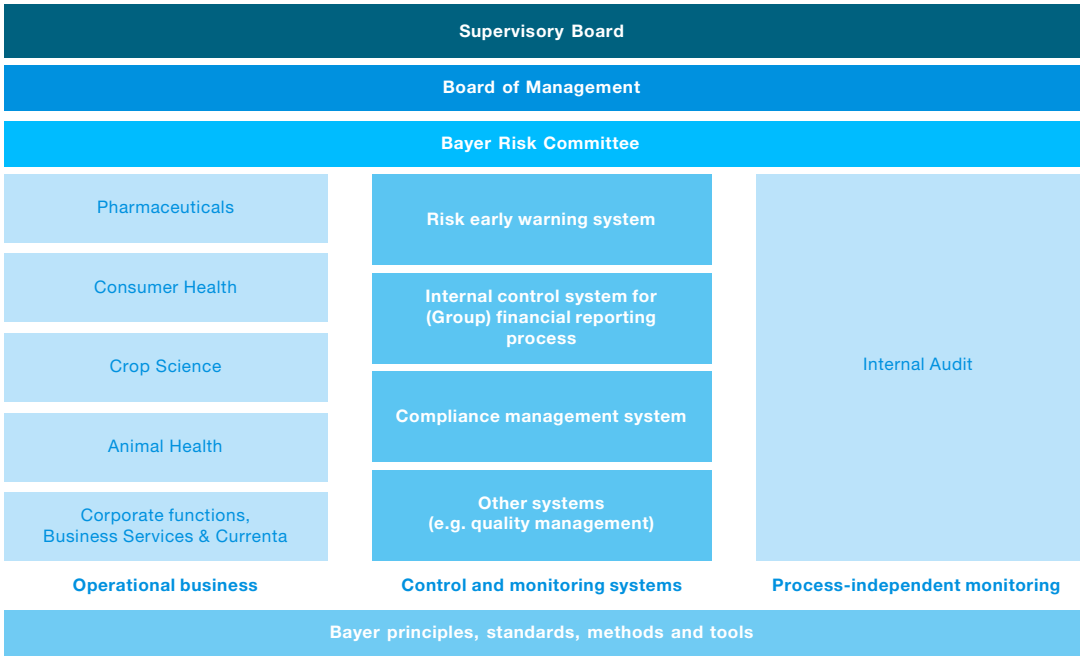
The Bayer Group has implemented a holistic and integrated risk management system designed to ensure the continued existence and future target attainment of the Group through the early identification, assessment and treatment of risks.

The Bayer Group's 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 (ISO).

Structure of Bayer's Risk Management System

A 3.2.1/1

Structure of the Risk Management System



Board of Management / Supervisory Board
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.

Bayer Risk Committee
The Bayer Risk Committee, which is chaired by the Chief Financial Officer, is comprised of representatives from the segments and corporate functions. It ensures that all relevant risks are adequately addressed with risk mitigation measures, and also discusses and regularly evaluates the risk portfolio and the mitigation status.

Business operations
Responsibility for the identification, assessment, treatment and reporting of risks lies with the operational business units in the segments and corporate functions.

Control and monitoring systems
To enable the Board of Management and the Supervisory Board to monitor material business risks as required by law, the Bayer Group has 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. Various corporate functions are responsible for these systems.

As the main corporate function for control and monitoring systems, the Risk Management function assumes governance and coordination responsibilities in relation to the risk management system. It provides overarching standards, methods and tools, is responsible for the risk early warning system, steers the annual ERM process and ensures reporting to the Bayer Risk Committee and the Board of Management. The three systems in place at Bayer are described below.

Risk early warning system

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

Internal control system for (Group) accounting and financial reporting

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

As part of the comprehensive risk management system, Bayer has an internal control system (ICS) in place for the (Group) accounting and financial reporting process. This process comprises defined structures and workflows implemented throughout the organization. The purpose of our ICS is to ensure proper and effective accounting and financial reporting in accordance with Section 289, Paragraph 4 and Section 315, Paragraph 4 of the German Commercial Code. The ICS is designed to guarantee timely, uniform and accurate accounting for all business transactions based on applicable statutory regulations, accounting and financial reporting standards and the internal Group policies that are binding upon all consolidated companies. Risks are identified and assessed, and mitigated using suitable countermeasures. Mandatory ICS standards such as system-based and manual reconciliation processes and functional separation have been derived from these frameworks and promulgated throughout the Group by the Risk Management function on behalf of the Chief Financial Officer of Bayer AG. The ICS standards are implemented by the Group companies and their compliance overseen by the respective management. Using Bayer's shared service centers, these companies prepare their financial statements locally and transmit them with the aid of a standard Group data model. This data model is based on the Group accounting policy and thus ensures the regulatory compliance of the consolidated financial statements. The Board of Management has confirmed the effective functioning of the ICS and the relevant criteria for the 2017 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

See also A 4.2

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. Details on compliance management can be found under A 4.2 "Compliance." This section describes in particular the process used to identify risks and measures taken to mitigate them.

Process-independent monitoring

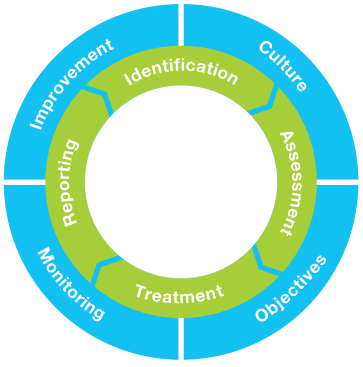
Among other tasks, the Internal Audit function supports the Board of Management in the independent monitoring of the risk management system. It examines individual risk areas and the measures undertaken.

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 Risk Management System

A 3.2.1/2

Basic Elements of the Risk Management System



The basic elements of the risk management system are described below and established in binding documents.

Risk culture and objectives of the risk management system
The principles of the risk management system are based on the strategic objectives of the Bayer Group as a whole and its individual segments, and establish the foundation for proper and responsible risk management.

The incorporation of all levels of the company into this process heightens awareness about and understanding of risks, which is essential for creating a risk culture. Furthermore, the clearly defined roles and responsibilities, principles, standards, methods, tools and training measures create the foundation for the independent, proactive and systematic management of risks.

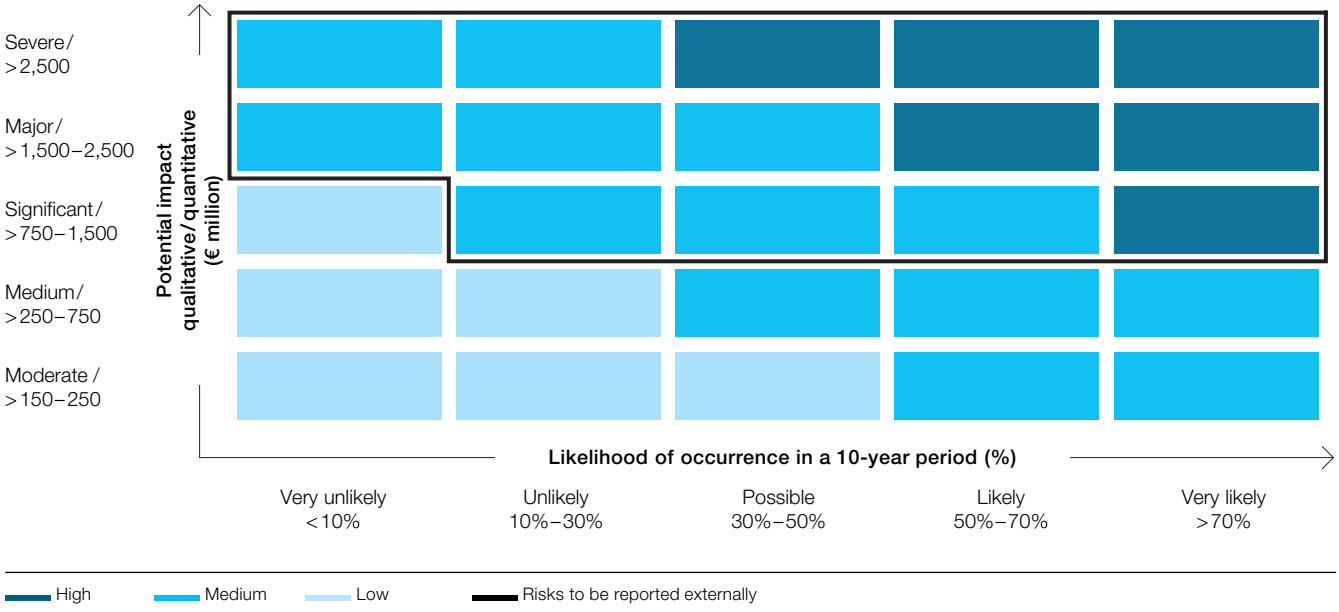
Risk management process
Identification: Risks are identified by risk owners in the operational companies and functions. To support the most complete possible identification of risks, the Bayer Group maintains a Risk Universe that reflects the potential risk categories of Bayer as a life science company. The Bayer Risk Universe also expressly accounts for risks of a nonfinancial nature that are linked with our business activity or business relationships, products and services. Pursuant to the CSR Directive Implementation Act, such risks can include environmental, employee and social issues, as well as human rights, and corruption and bribery (compliance). The Bayer Risk Universe is regularly examined and updated if necessary.

For further information on the implementation of the CSR Directive, see “About this Report”

Assessment: As set out in the following matrix, the identified risks are evaluated according to their potential impact and likelihood of occurrence, taking into account mitigation measures. Beginning this year, risks are classified in a 5x5 matrix; previously a 3x3 matrix was used.

A 3.2.1/3

Risk Assessment Matrix



The extent of the impact is rated according to quantity and / or quality. The quantitative assessment reflects the possible loss of cash flows, whereas an earnings parameter was previously used. A qualitative assessment of damages is based on criteria such as the impact on our strategy or reputation, the potential loss of stakeholder confidence, and the potential violation of sustainability principles (e.g. in the area of safety, environmental protection or human rights). The highest rating – qualitatively or quantitatively – determines the overall assessment. The likelihood of occurrence is calculated based on a period of ten years. Risks are classified as high, medium or low to assess their materiality regarding the overall risk portfolio.

Risks with a potential impact of over €4,000 million are separately examined by the Bayer Risk Committee to determine their potential to endanger the company's continued existence.

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

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

Monitoring and improvement
The appropriateness and timeliness of the principles, standards, methods and tools are continuously evaluated by those responsible for ERM. Should the targets and / or the Bayer Risk Universe change, for example, this leads to an adjustment.

3.2.2 Opportunity and Risk Status

As material reportable risks pursuant to German Accounting Standard No. 20, all high and medium – or at least significant in terms of potential impact – financial and nonfinancial risks, within the black outline in the rating matrix A 3.2.1/3, are reported as follows. By contrast, according to the system applied in the previous year, all risks with a total potential impact of €500 million were taken into account. In addition, we report relevant risks that from a financial point of view may not be sufficiently or meaningfully quantifiable, if at all. The risks reported in this section are described in detail and include the measures established to mitigate them (net risk). We also report on the principal opportunities identified in the course of our opportunity management.

Comparable risks existing in different segments of the company are bundled where applicable. The order in which the risks are listed does not imply any order of importance. The risk management processes were further developed compared with the previous year and the assessment method changed as described above. For this reason, a year-on-year comparison of risks is only possible to a limited extent and is therefore not illustrated here. Wherever relevant, we also describe segment-specific peculiarities of opportunities and risks.

See also A 3.2.1 and "About this Report"

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 and their likelihood of occurrence would have to be classified as "highly likely." We did not identify any such risks in 2017.

See also A 3.2.3

The following table provides an overview of the individual risk categories together with risk classes and the segments that are affected. The opportunities and risks resulting from the planned acquisition of Monsanto are described in detail in the following chapter.

A 3.2.2/1

Overview of Material Risk Areas

Risk category	Risk class	Affected segment(s) or Group[1]
Strategic risks		
External network and partnerships	Medium	PH, Group
Operational performance risks		
Intellectual property	Medium	PH, CS
Research and development	High	PH, CS[2]
Market supply	Medium	CS
Personnel	Medium	Group
Information technology	Medium	Group
Finance, accounting and tax	Medium	Group
Safety, quality and compliance risks		
Product safety	Medium	PH, CS
Health, safety and environment	Medium	Group
Quality and regulatory requirements	High	CS, PH[2]
Legal compliance	See A.3.2.2 "Legal compliance"	
External risks		
Business markets	Medium	PH, CS, CH
Political, social and macroeconomic environment	Medium	CS
Natural disasters and crises	Medium	PH, Group

PH: Pharmaceuticals; CS: Crop Science; CH: Consumer Health

[1] Listed are those segments that have identified material risks. Other segments may also be affected to a lesser extent. The Group has been indicated where material risks have been reported by corporate functions.

[2] Risk class: medium

External network and partnerships

We collaborate with partners along the value chain of our products. Suboptimum performance by collaboration partners may affect the development, manufacture or marketing of our products and services and adversely impact our business.

In some countries the marketing rights for certain pharmaceutical products are held by third parties. Inadequate performance by these marketing partners could adversely affect the development of our sales and costs. Therefore, we have established an Alliance Management unit to monitor the most important collaborations and provide relevant support to the operational functions.

Furthermore, some materials, particularly in our Pharmaceuticals segment, are provided by only a very limited number of suppliers. Production could be disrupted by delays in delivery. Price adjustments may also occur that could have a negative impact on our margin. We counter these risks by establishing alternative suppliers, concluding long-term agreements, expanding inventories or producing raw materials ourselves. Strategic Material Review Committees (SMRCs) regularly examine and assess the supplier risks.

From the perspective of the Group as a whole, there is a risk that our corporate values, ethical requirements, compliance and sustainability are not adequately accounted for by our external network and our partners. We counter this risk through an evaluation process, a code of conduct for suppliers, and supplier evaluations and audits.

See also A 1.4.2.1

Intellectual property

The Bayer Group, now as in the past, has a portfolio that largely consists of patent-protected products. Due to the long period of time between the patent application and the market launch of a product, Bayer generally only has a few years in which to earn an adequate return on its investment in research and development. This makes effective and reliable patent protection all the more important. 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. Legal action by third parties for alleged infringement of patent or proprietary rights by Bayer may impede or even halt the development or manufacturing of certain products or require us 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 32 to B Consolidated Financial Statements

Research and development

We believe that our innovation strength holds opportunities both for the continued development of our brands and for the expansion of the research pipeline in all of our businesses.

In the Pharmaceuticals segment, opportunities result from digitalization and associated new research and development methods that save time and increase development effectiveness.

We also rely on networking, both within the company and with external partners, to boost our innovation strength. This stimulates the development of new products in the long term.

See also A 1.3

Despite all our efforts, we cannot assure that we will identify a sufficient number of research candidates and that all of the products we are currently developing or will develop in the future will achieve and retain planned approval/registration or commercial success. Among other factors, this may result from the failure to meet technical, capacity- and time-related requirements or the inability to meet trial objectives in product development. The performance of our research partners could also have a limiting impact in this respect. Delays or cost overruns might occur during product registration or launch. The Bayer Group seeks to counter this risk by way of holistic portfolio management in order to estimate the probability of success and prioritize its development projects.

Market supply

See also
A 1.4.2.1 and A 1.4.2.2

Despite all precautions, operations at our sites may be disrupted by fires, power failures, cyber attacks or supply disruptions. This also applies to external partners. If we are unable to meet demand for our products, sales may undergo a structural decline. We counter this risk by distributing production for certain products among multiple sites or by building up safety stocks. Furthermore, an emergency response system based on the respective corporate policy has been implemented at all our production sites as a mandatory component of our HSEQ management.

Personnel

See also A 1.4.1.1

Skilled and dedicated employees are essential for the company's success. Difficulties in recruiting, hiring, retaining and further developing specialized employees could have significant adverse consequences for the company's future development. Furthermore, an inadequate and nontransparent company culture and strategy, as well as the resulting objectives and demands placed on employees, could lead to declining motivation and unsatisfactory performance and have a negative impact on Bayer's attractiveness as an employer.

Based on our analysis of future requirements, we design appropriate employee recruitment and development measures. In addition, the alignment of our company 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, enabling us to constantly motivate our employees.

Information technology

Business and production processes and the internal and external communications of the Bayer Group are dependent on global IT systems. The confidentiality of internal and external data is of fundamental importance to Bayer in this connection. A loss of data confidentiality, integrity or authenticity, for example due to (cyber) attacks, could lead to manipulation and/or the uncontrolled outflow of data and know-how. Measures undertaken to counter this risk include the high-intensity testing of new technologies to be deployed and the implementation of projects to keep technical security standards up to date and proactively examine new threats (e.g. Information Security@Bayer, Cyber Security Initiative, User Awareness). In addition, the existing IT infrastructure is protected against unwanted access through security measures by the Corporate Cyber Defense Center.

Finance, accounting, tax

Liquidity risk

Liquidity risks reflect the possible inability of the Bayer Group to meet current or future payment obligations. The liquidity risk is determined and managed by the Finance function as part of our same-day and medium-term liquidity planning. The Bayer Group holds sufficient liquidity to ensure the fulfillment of all planned payment obligations at maturity. For unbudgeted shortfalls in cash receipts or unexpected disbursements, furthermore, a reserve is maintained whose amount is regularly reviewed and adjusted. Credit facilities also exist with banks, including, in particular, an undrawn €3.5 billion syndicated revolving credit facility with a current maturity of 2020.

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 respective invoicing companies appoint credit managers who regularly analyze customers' creditworthiness. Some of these receivables are collateralized, and the collateral is used according to local conditions. These include credit insurances and guarantees. We generally agree reservation of title with our customers. Credit limits are set for all customers. All credit limits for debtors where total exposure is €10 million or more are evaluated locally and submitted to the Group Finance function. Credit risks from financial transactions are managed centrally in the Finance 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 fluctuating exchange and interest rates in the market are managed by the Finance function. Risks are avoided or mitigated through the use of derivative financial instruments. The type and level of currency and interest-rate risks are explained using sensitivity analyses based on hypothetical changes in risk variables (such as interest curves) to determine the potential effects of market price fluctuations on equity and earnings. The assumptions used in the sensitivity analyses reflect our view of the changes in currency exchange and interest rates that are reasonably possible over a one-year period. These assumptions are regularly reviewed.

Foreign currency opportunities and risks for the Bayer Group result 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 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. 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 and equity (other comprehensive income) as of December 31, 2017, by €346 million (December 31, 2016: €380 million). Of this amount, €155 million is related to the U.S. dollar (USD), €66 million to the Chinese renminbi (CNY), €44 million to the Japanese yen (JPY) and €40 million to the Canadian dollar (CAD). Currency effects on anticipated exposure are not taken into account. Derivatives used to hedge anticipated currency exposure that are designated for hedge accounting would have improved or diminished other comprehensive income by €353 million.

Interest-rate opportunities and risks result for the Bayer Group through 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 opportunities and risks are managed over a target duration established by management for Bayer Group debt that is subject to regular review. Interest-rate swaps are concluded to achieve the target structure for Bayer Group debt. A sensitivity analysis based on our net floating-rate receivables and payables position at year end 2017, taking into account the interest rates relevant for our receivables and payables in all principal currencies, produced the following result: A hypothetical increase of one percentage point in these interest rates (assuming constant currency exchange rates) as of January 1, 2017, would have raised our interest expense for the year ended December 31, 2017, by €13 million (December 31, 2016: €31 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 as 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 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. Bayer Group 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. We counter the resulting risks by continuously identifying and evaluating the tax framework.

Product safety

See also A 1.4.3.1

Bayer evaluates the potential health and environmental risks of a product along the entire value chain. Despite extensive studies prior to approval or registration, it is possible that products could be partially or completely withdrawn from the market due to the occurrence of unexpected side effects or other factors. Such a withdrawal may be voluntary or result from legal or regulatory measures. We counter these risks through our organizational and operational structure in the areas of pharmaceutical and crop protection product safety and testing. In addition, Crop Science has a comprehensive stewardship program in place.

Health, safety and environment

We attach great importance not only to product safety but also to protecting our employees and the environment. Misconduct and noncompliance with these requirements may result in personal injury, property, reputation and environmental damage, loss of production, business interruptions and/or liability for compensation payments. With our principles, standards and measures, we ensure that our requirements are adequately communicated, understood and optimally implemented.

See also A 1.4.3.2 and A 1.4.3.3

Quality and regulatory requirements

In almost every country where we operate, our business activity is subject to extensive regulations, standards, requirements and inspections. Due to growing public and regulatory expectations, we continue to anticipate considerably more stringent regulatory requirements; for example for clinical studies or production processes in the area of health or at Crop Science in the monitoring of genetically modified organisms, particularly at country level. The presence of traces of unwanted genetically modified organisms in agricultural products and/or foodstuffs cannot be entirely excluded. Potential infringements of current or changing regulatory requirements may result in the imposition of civil or criminal penalties, including substantial monetary fines, a restriction on our freedom to operate, and/or other adverse financial consequences. They could also harm Bayer's reputation and lead to declining sales and/or margins. Changed requirements can also lead to higher product development costs and times as well as a necessary adjustment in the product portfolio.

We counter these risks through binding principles and standards, and implemented control mechanisms. Changes in regulatory requirements are monitored to ensure their implementation. Quality requirements are defined and implemented in global quality management systems.

See also A 1.4.3.1

Legal compliance

The Bayer Group is exposed to risks from legal disputes or proceedings to which we are currently a party or which could arise in the future, particularly in the areas of product liability, competition and antitrust law, anticorruption law, patent law, tax law, data protection and environmental protection. Investigations of possible legal or regulatory violations, such as potential infringements of antitrust law or certain marketing and/or distribution methods, may result in the imposition of civil or criminal penalties – including substantial monetary fines – and/or other adverse financial consequences, harm Bayer's reputation and hamper our commercial success. Bayer has established a global compliance management system to ensure the observance of laws and regulations.

See also A 3.2.1, A 4.2 and Note 32 to B Consolidated Financial Statements

Business market

There is a risk that our growth and market share could be impeded by increasing global cost pressure on health care systems, as well as price regulations. Government price controls, in part due to global cost pressure on health care systems, could reduce earnings from our pharmaceutical products and may occasionally make the market launch of a new product unprofitable. Furthermore, our growth and the development of our market share could be negatively affected by innovative and aggressive (pricing) policies by competitors, including generic competitors.

We expect the current extent of regulatory controls and pricing pressure to persist or increase. We are responding to this trend by expanding in-house research and development capacities and through acquisitions and collaborations.

See also A 3.2.3

The current global consolidation process in the seeds and crop protection is also altering our future competitive environment. We also see a risk in the Crop Science segment that digitalization could fundamentally change markets for seeds and crop protection products, and have an impact on value creation and access to markets and customers. Should we be unable to profit from or counteract these developments through suitable initiatives, this could lead to a loss of customers, market share or business value and necessitate higher subsequent investments. We are countering this risk in part through our Digital Farming Initiative, in which we utilize findings from the analysis and interpretation of agricultural data, and through selected further acquisitions and broadly based scientific and commercial partnerships.

The risk of existing business models being disrupted by digitalization or new digital products is also present in the Consumer Health segment. Digitalization is a key factor in gaining a competitive advantage. If we fail to adequately integrate this development into our existing business models, we could lose customers or market share. In the context of initiatives, we monitor the market very closely and develop strategies to illustrate developments in our business models.

Political, social and macroeconomic environment

Changes in political, social and macroeconomic factors such as economic growth, life expectancy, population size and consumer behavior as well as societal trends, political crises and instability result in opportunities for us, but are also associated with risks.

Modern agricultural methods, the application of certain classes of crop protection products and the use of genetic engineering are repeatedly the subject of intense public debate. This political opinion-forming may yield legislative and regulatory decisions that significantly limit the use of our products or even result in voluntary or mandated product withdrawals. In addition, decisions could also affect agricultural imports from other parts of the world and therefore our business in those regions. To mitigate such risks, we are closely monitoring the regulatory and legislative decision-making processes and developing our product portfolio with a view to the anticipated changes. We are also engaged in a constant dialogue with interest groups and regulators to promote a scientifically founded, rational and responsible discussion and decision-making process.

The opportunities for our agricultural businesses arise from global population growth and the increasing demand for food. In addition, consumer behavior in some regions is shifting toward higher demand for food products of animal origin. Agricultural productivity therefore needs to increase in view of declining per-capita acreages, the challenges presented by climate change, and increasing pesticide resistance. We expect the demand for high-quality seed and crop protection products to rise in light of the need to produce sufficient food and animal feed to meet the growing demand in spite of limited acreages. In response, Crop Science is developing processes to more effectively protect plants against climatic and environmental influences and raise crop yields, for example.

The increase in quality of life and life expectancy is leading to a heightened focus on the medical care needs of elderly patients. Our concentration on certain partly age-related diseases such as cancer or chronic cardiovascular disorders harbors opportunities for us. In response to the growing demand for innovative health care products to treat age-related diseases, Bayer's Pharmaceuticals segment is concentrating its research and development activities on relevant therapeutic areas.

Natural disasters and crises

Our business activities could be affected by natural disasters, pandemics and epidemics, terrorist activities or comparable critical events. For example, some of our production sites are located in regions that could be affected by natural disasters such as flooding or earthquakes. Such events could cause stoppages at production plants or other disruptions, or result in personal injury and damage to our reputation, as well as lead to declines in sales and/or margins and necessitate the reconstruction of damaged infrastructure.

We address these risks through our local crisis organizations, which, among other things, provide response plans. We have implemented early warning systems, ensure continuous reporting and carry out regular crisis simulation exercises. In addition, we have established global safety communities, and the Business Continuity Management department within the Group Risk Management function assesses such risks and defines appropriate measures together with the responsible specialist units.

3.2.3 Opportunities and Risks Related to the Planned Acquisition of Monsanto

In order to prepare the future integration of the Monsanto business, Bayer has initiated a project in which the integration process is being carefully planned in all business areas so that it can be achieved after all regulatory approvals have been received and the transaction has been closed. Our existing risk management methods are being applied here to identify at an early stage possible risks resulting from the acquisition and integration, and to initiate suitable countermeasures as quickly as possible. The integration process will start after the transaction is closed, which we now expect in the second quarter of 2018. Bayer is experienced in successfully integrating acquisitions from a business, geographical and cultural perspective, and in so doing remains committed to its strong culture of innovation, sustainability and social responsibility.

Opportunities

Following the successful integration of the Monsanto business, we see additional opportunities for combining our complementary innovative expertise. Feeding a growing global population in an ecologically sustainable way is among the challenges faced by agriculture, and is one that requires a new approach that more systematically integrates expertise across seeds, traits and crop protection including biologicals. The merger would enable us to offer a broader portfolio of innovative products tailored to meet farmers' individual needs and the many challenges they face. The range and depth of our research and development activities should make it possible to optimize the various technologies so that we can accelerate the time-to-market of enhanced innovations. We believe that by combining our innovation capacities and our research and development budget, we can more effectively tackle the challenges faced in developing and introducing innovations in agriculture, including longer and more costly development cycles or stricter regulatory requirements. In the medium to long term, we plan to leverage the strengths of the combined R&D platform to deliver pioneering technologies faster and to provide our customers with advanced, customized product solutions on the basis of agricultural analysis, along with supporting digital farming applications. These developments are expected to result in significant and lasting benefits for farmers: from improved sourcing and increased convenience to higher yield, better environmental protection and sustainability. We believe the combined company will be very well positioned to tap the considerable long-term growth potential of the agricultural sector.

See also A 1.2.1 for Crop Science strategy

Risks

The size and importance of the acquisition result in the following principal risks, which could adversely affect our current or future business, financial position, share price or dividend payments. As Bayer and Monsanto are currently still independent companies, the risks are not assessed through the previously described Enterprise Risk Management process. Some are identified and evaluated as part of the project set up to prepare for the integration, based on available information. The list of risks therefore makes no claim to completeness, nor does the order in which they are listed imply any order of importance.

Requirements for closing

At the present time, the possibility cannot be excluded that the planned acquisition will be delayed or not take place at all. The transaction remains subject to customary closing conditions, including relevant antitrust and other regulatory approvals. The necessary approvals may be refused or could be tied to certain divestment actions or other commitments required by regulators of Bayer and/or Monsanto. Such measures could negatively impact our strategic planning and necessitate substantial adjustments to our operational and financial structures. Furthermore, Bayer may not be able to effect commitments in a timely manner, or at all, or on economically viable terms.

The merger agreement also provides for payment by Bayer of a US$2 billion reverse break fee, in particular, in the event that the transaction has not been closed at the latest by June 14, 2018, because a necessary antitrust approval has not been granted and Bayer or Monsanto therefore terminates the merger agreement.

Strategic or operational objectives may not be met

Our strategic and operational objectives regarding the acquisition and integration of the Monsanto business are based on assumptions and estimates we have made that may prove inaccurate, including Monsanto's earning potential and cost structure, the synergy and innovation potentials of both companies and future economic developments and market changes.

Integration-related risks

In addition, difficulties may arise in connection with the acquisition and integration of the Monsanto business that adversely impact our current business or may prevent the expected benefits of the acquisition from being fully realized.

It is therefore possible that combining businesses, processes and workforces as intended while retaining multiple corporate locations could be more complex than expected, partly in view of different corporate cultures and divergent internal control and compliance systems. The merger could also lead to the loss of customers, suppliers, partners, licensors or contacts to other stakeholders.

The possible loss of employees in key positions could have a particularly negative effect. The successful integration and the implementation of a joint strategy require managerial staff and talented employees from both Bayer and Monsanto. Should we be unsuccessful in retaining these employees, for example due to potential uncertainty among employees regarding jobs, company locations or corporate culture, this could impede the efficient integration and leveraging of the two companies' respective strengths. In particular, we could lose the know-how of these managerial staff and talented employees. This could negatively affect our innovation capability and lead to business disruptions.

The achievement of expectations in terms of the tax and accounting treatment of the transaction will be subject to a future detailed review. In light of this, it is possible that there will be unexpectedly high transaction and integration costs along with further risks and/or charges. It is also possible that we may be forced to recognize an impairment loss on the intangible assets of Monsanto and the goodwill of Crop Science if unforeseen difficulties arise during the integration, if the Monsanto business fails to develop as expected or if other business developments affecting Crop Science occur that have not been anticipated.

Change in the risk profile and in regulatory and legal requirements

We anticipate that our risk profile will change as a consequence of acquiring and integrating the Monsanto business. We could be exposed to additional risks in connection with the combined agricultural business of Bayer and Monsanto that in some cases may not yet have been identified or cannot be conclusively assessed. We may face increased or additional risks as well as further regulatory or legal requirements that are not yet transparent, such as those resulting from Monsanto's stronger focus on seed, modified plant traits and phosphate mining. Noncompliance with these requirements could result in export restrictions, product recalls or litigations. The rejection or limitation of marketing authorizations would lead to the restriction or discontinuation of marketing for the affected products. Furthermore, a lack of public understanding and of acceptance or perceived acceptance of biotechnology and other agricultural products of Monsanto and of the advantages of the pending transaction could damage Bayer's reputation and consequently negatively impact Bayer's business or earnings situation. It is possible that the acquisition of the Monsanto business could, among other things, lead to a sustainability rating downgrade. This increased reputation risk exists for the entire Group and could, for example, have a negative impact on regulatory decisions.

Risks from the financing of the planned acquisition

We are also exposed to certain risks from the financing of the planned acquisition. These mainly result from the need to refinance the original acquisition financing, the increase in debt and the possible credit rating downgrade by the rating agencies. Risks also arise from the development of the USD / EUR exchange rate and the interest rate level, as well as from potential difficulties in refinancing the transaction with (additional) equity capital to the extent planned.

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

In the opinion of the Board of Management, based on the current evaluations, none of the risks described above endanger the company's continued existence. Nor could we identify any risk interdependencies that could combine to endanger the company's continued existence. Based on our existing business activity, we do not see any change in our risk situation compared with the previous year. However, we see an increase in the overall risk situation when the planned acquisition of Monsanto is taken into account. We remain convinced that we can take advantage of the opportunities resulting from our entrepreneurial activity and successfully master the challenges resulting from the risks stated above.

No risks that could endanger the company's existence.

4. Corporate Governance Report

Conformance with the recommendations of the German Corporate Governance Code

Diversity concepts and new targets defined for proportion of women in senior positions

Nonfinancial statement integrated into management report

The Board of Management and the Supervisory Board have compiled a complete Corporate Governance Report, which is available on the Bayer AG website at www.bayer.com/en/Corporate-Governance.aspx

See also C Governance Bodies

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. The information contained in the Declaration by Corporate Management is unaudited pursuant to Section 317, Paragraph 2, Sentence 4 and Sentence 5, of the German Commercial Code.

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

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 and the Supervisory Board and its 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 2017, the Board of Management and the Supervisory Board of Bayer AG again issued an unqualified declaration pursuant to Section 161 of the German Stock Corporation Act that they fully complied with the recommendations of the German Corporate Governance Code in the past and intend to maintain full compliance in the future.

The declaration issued in December 2017 concerning the German Corporate Governance Code is published on the Bayer website along with previous declarations: www.bayer.com/en/corporate-governance.aspx

Information on corporate governance practices

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

See A 1.1 Vision and values

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

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

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 our Supplier Code of Conduct. The organization and oversight obligations of the Board of Management and the Supervisory Board are mainly ensured by compliance management and risk management systems.

Board of Management

Composition and objectives (diversity concept)

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

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

In the composition of the Board of Management, the Supervisory Board mainly takes into account specialist expertise and personal aptitude, as well as aspects such as age, gender, education and professional background. With regard to the proportion of women on the company's Board of Management, the Supervisory Board aims to ensure that there is at least one woman serving on the Board of Management. This corresponds to a share of around 14% on the seven-member Board of Management.

Another 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 background of the members of the Board of Management. In addition to the requisite specific professional expertise, management and leadership experience for the given task, members of the Board of Management should cover as broad a spectrum of knowledge, experience, and educational and professional backgrounds as possible.

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 statutory requirements, furthermore, there are also targets pertaining to the proportion of women at the first and second management levels below the Board of Management of Bayer AG. 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.

Implementation status of the objectives

In accordance with the target set by the Supervisory Board, the Board of Management has one female member, namely Erica Mann. However, she will leave the company effective March 31, 2018. Erica Mann will be succeeded by Heiko Schipper, meaning that the Board of Management will not comprise any women for the time being. We will continue to intensively pursue our target of having one woman on the Board of Management by our deadline of June 30, 2022, or beforehand if at all possible. The goal of adequate representation of different age groups, while also taking into account the experience required for Board of Management positions, was achieved. The ages of the members of the Board of Management were relatively evenly spread across a range of 49 to 61 years as of December 31, 2017. Four of the seven members of the Board of Management 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 educational and professional backgrounds: Some have completed various business-related courses of study or training, while others have studied in various scientific fields including medicine.

In the future, there should continue to be at least one woman on the Board of Management.

Procedure and committees

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

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

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

Online Annex: A 4.1-1

The Board of Management of Bayer AG defines the long-term goals and the strategies for the company and the Group and sets forth the principles and directives for the resulting corporate policies. It coordinates and monitors the most important activities, defines the portfolio, develops and deploys managerial staff, allocates resources and decides on the Group's financial steering and reporting.

The members of the Board of Management bear joint responsibility for running the business as a whole. However, the individual members manage the areas assigned to them on their own responsibility within the framework of the decisions made by the full Board. The allocation of functions among the members of the Board of Management is defined in a written schedule.

The full Board of Management makes decisions on all matters of fundamental importance and in cases where a decision of the full Board is prescribed by law or otherwise mandatory. The rules of procedure of the Board of Management contain a list of topics that must be dealt with and resolved by the full Board.

Meetings of the Board of Management are held regularly. They are convened by the Chairman of the Board of Management. Any member of the Board of Management may also demand that a meeting be convened. The Board of Management makes decisions by a simple majority of the votes cast, except where unanimity is required by law. In the event of a tie, the Chairman has the casting vote.

According to the Board of Management's rules of procedure and the functional responsibilities assigned to its members, the Chairman bears particular responsibility for leading and coordinating the Board's work. He represents the company and the Group in dealings with third parties and the workforce on matters relating to more than one part of the company or the Group. He also bears special responsibility for certain functions.

In addition to the function of Board Chairman, there are three functions with special responsibility for the operating divisions and three further functions: Finance; Human Resources, Technology and Sustainability (the incumbent also serving as Labor Director); and Innovation.

A Deal Committee was established within the Board of Management that makes final decisions with regard to acquisitions and divestitures and license transactions of a defined, medium size. There are no other committees within the Board of Management.

Supervisory Board

Composition and objectives (diversity concept and expertise profile)

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

Compensation of the members of the Supervisory Board: see A 4.3

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

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

The Supervisory Board has also resolved to pursue diversity in its composition, for instance with regard to age, gender, education and professional background. With respect to the international business alignment of Bayer AG, the Supervisory Board strives to ensure at all times that several of its members have international business experience or an international background in other respects. Further objectives concerning the composition of the Supervisory Board are that different age groups be suitably represented on the Supervisory Board and that, absent special circumstances, a member should not hold office beyond the end of the next Annual Stockholders' Meeting following his or her 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. In addition, the Supervisory Board aims for at least three quarters of its total membership (stockholder and employee representatives) to be independent. The Supervisory Board assesses the independence of its members according to the recommendation contained in Section 5.4.2 of the German Corporate Governance Code. In assessing independence, the Supervisory Board also considers the criteria given in the recommendation of the European Commission of February 15, 2005[1]. Finally, the Supervisory Board has set a standard limit on the duration of any person's membership of the Supervisory Board in line with the recommendation in Section 5.4.1, Paragraph 2 of the Code. Absent special circumstances, no person should remain a member of the Supervisory Board for more than three full terms of office. For members of the Supervisory Board serving at the time the standard limit was introduced (September 2015) who have already exceeded this limit or will exceed it by the end of their current term of office, the limit will be applied with effect from the conclusion of their current term of office.

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. An 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 as many different perspectives as possible are represented in the leadership of the company 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 47 to 71 years as of December 31, 2017. The objective that a member should step down from the Supervisory Board at the Annual Stockholders' Meeting following his or her 72nd birthday – absent special circumstances – is being met. Two members of the Supervisory Board were previously members of the company's Board of Management: Werner Wenning was Chairman of the Board of Management until 2010, and Prof. Dr. Wolfgang Plischke was a member of the Board of Management until 2014. One member of the Supervisory Board, Dr. Paul Achleitner, has been a member of the Supervisory Board for more than three terms of office. However, neither Werner Wenning nor Prof. Dr. Wolfgang Plischke nor Dr. Paul Achleitner has any personal or business relationship with the company or a governance body of the company that in the opinion of the Supervisory Board gives rise to a material conflict of interest of a more than temporary nature.

[1] Annex 2 to the recommendation of the European Commission of February 15, 2005, on the role of nonexecutive or supervisory directors of listed companies and on the committees of the (supervisory) board (2005/162/EC)

There are no indications of any possible lack of independence in the case of the other Supervisory Board members. Thus the Supervisory Board considers all of its members to be independent. The proportion of women on the Supervisory Board is currently 30% for the full Supervisory Board and 30% for both the employee and the stockholder representatives. Four 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 various different vocational training and study courses.

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.

Online Annex: A 4.1-2

The Chairman of the Supervisory Board coordinates its work and presides over the meetings. Through regular discussions with the Board of Management, the Supervisory Board is kept constantly informed of business policy, corporate planning and strategy. The Supervisory Board approves the annual budget and financial framework. It also approves the financial statements of Bayer AG and the consolidated financial statements of the Bayer Group along with the combined management report, including the nonfinancial statement, while also taking into account the reports by the auditor.

The Supervisory Board has the following committees:

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 plenary meeting. Certain decision-making powers in connection with capital measures, including the power to amend the Articles of Incorporation accordingly, have also been delegated to this committee. On a case-by-case basis, furthermore, the Supervisory Board can delegate certain responsibilities to the Presidial Committee. Finally, the Presidial Committee may also undertake preparatory work for full meetings of the Supervisory Board.

Audit Committee: The Audit Committee comprises three stockholder representatives and three employee representatives. The Chairman of the Audit Committee in 2017, Dr. Klaus Sturany, satisfies the statutory requirements concerning the expertise in the field of accounting or auditing that a member of the Supervisory Board and the Audit Committee is required to possess. The Audit Committee meets regularly four times a year. Its tasks include in particular oversight of financial reporting, the financial reporting process, the effectiveness and ongoing development of the internal control system, the risk management system, the internal audit system, the compliance system and the audit of the financial statements. The Audit Committee prepares the resolutions of the Supervisory Board concerning the financial statements and management report of Bayer AG and the proposal for the use of the distributable profit, as well as resolutions concerning the consolidated financial statements and management report of the Bayer Group and the agreements with the auditor (particularly the awarding of the audit contract, the determination of the main areas of focus for the audit and the audit fee agreement). The committee submits a reasoned proposal to the full Supervisory Board concerning the auditor's appointment that contains at least two candidates in the tender process, and takes appropriate measures to determine and monitor the auditor's independence. It is also responsible for approving all services performed by the auditor in addition to the audit of the financial statements. The audit focuses particularly on whether the financial statements have been prepared in com-

pliance with the statutory requirements and whether the financial reporting provides a true and fair view of the financial position and results of operations of the company and the Group. The Audit Committee discusses developments in the area of corporate compliance at each of its meetings. 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 interim financial reports.

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

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. The Nominations Committee comprises the Chairman of the Supervisory Board and the other stockholder representative on the Presidial Committee.

Innovation Committee: The Innovation Committee is primarily concerned with the innovation strategy and innovation management, the strategy for the protection of intellectual property, and major research and development programs at Bayer. Within its area of responsibility, the committee advises and oversees the management and prepares any Supervisory Board decisions. The Committee comprises the Chairman of the Supervisory Board and seven other members of the Supervisory Board, with parity of representation between stockholder and employee representatives. The Chairman of the Board of Management and the member of the Board of Management responsible for Innovation regularly attend the meetings of the Innovation Committee.

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 he or she has a close relationship, within a calendar year has reached the €5,000 threshold. The transactions reported to Bayer AG in 2017 were duly published and can be viewed on the company's website.

www.bayer.com/en/disclosure-of-securities-transactions.aspx

4.2 Compliance

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

www.bayer.com/compliance

The Board of Management is unreservedly committed to compliance, and Bayer will forego any business transaction that would violate the compliance principles in force throughout the Bayer Group.

The global compliance management system is steered by a central compliance organization within the Bayer Group. This organization is headed by the Group Compliance Officer, who reports directly to the Chairman of the Board of Management and to the Audit Committee of the Supervisory Board on matters of this nature. The compliance organization is staffed with specialized compliance managers who are responsible for the corporate functions and for establishing business- and industry-specific standards in the divisions, business units and service companies.

Through our compliance management system, we aim to ensure lawful and responsible behavior by our employees. Potential compliance risks are identified together with the operational units to achieve systematic and preventive risk detection and assessment. Risks are identified not just by the global functions (top-down), but also by the Bayer country organizations (bottom-up). Compiled findings about risks are entered into a global statistical database for compliance risk management that we use to develop suitable measures for specific processes, business activities or countries, for example. We assess our business partners to the same extent with regard to potential compliance risks.

Corporate Compliance Policy

Our compliance principles apply throughout the Bayer Group and are established in our Corporate Compliance Policy. Here we commit to uphold ten principles, particularly in antitrust and anticorruption matters.

Online Annex: A 4.2-1

- Antitrust: fair competition in our markets
- Anticorruption: integrity in our business dealings at all times
- Corporate responsibility: sustainability, safety and product stewardship
- Foreign trade law: observance of relevant trade controls
- Insider trading: safeguarding of equal opportunity in securities trading
- Accurate books and records: complete and detailed recording of our business activities and financial transactions
- Fairness and respect at work: treating one another with fairness and respect
- Intellectual property: safeguarding our own intellectual property and respecting that of others
- Avoiding conflicts of interest: separation of business and personal interests
- Privacy: precautions to protect and secure personal data

All employees are required to observe these principles and to immediately report any violation of the Corporate Compliance Policy. This general reporting requirement does not apply in France due to peculiarities of national law. Bayer's senior managers serve as role models and therefore have a vital part to play in implementing the compliance principles. They may lose their entitlement to variable compensation components and be subject to further disciplinary measures if violations of applicable law or internal regulations have occurred in their sphere of responsibility. Compliant and lawful conduct also factors into the performance evaluations of all managerial employees.

Corruption Perceptions Index: see Glossary

Adherence to the corporate compliance principles is among the subjects covered in audits conducted by Bayer's Internal Audit. The planning of these audits follows a function- and risk-based approach that also takes a corruption perceptions index into account. The largest companies, which together account for about 80% of Group sales, are generally subjected to audits at three-year intervals. A total of 191 compliance audits were completed in 2017, of which 22 were preventive or incident-related audits. The head of Internal Audit and the Group Compliance Officer regularly attend the meetings of the Audit Committee of the Supervisory Board, presenting a summary of conducted audits and key findings at least once a year.

Compliance training

To create a positive compliance culture in our company, we support all employees in conducting their professional activities with integrity and avoiding potential violations before they can occur. Bayer therefore organizes Group-wide training programs tailored to requirements and target groups, along with extensive communications activities on relevant compliance issues and risks. In addition, compliance managers are available worldwide to answer questions from all employees regarding lawful and ethical behavior in business-related situations. Employees can also discuss such matters with their supervisors, who serve as role models for compliance.

We have set a Group target for nearly all of Bayer's managerial employees worldwide to complete at least one compliance training program each year. In 2017, 35,159 employees, or around 96.6%, completed such a program.

↗ Group target: annual compliance training for virtually 100% of Bayer managers

Online Annex: A 4.2-2

The aim of these targeted training programs is to ensure that employees do not overstep boundaries out of ignorance or uncertainty. Our compliance training programs reflect the main compliance risk areas and are available in various formats to meet the training needs of different employee groups. Some take the form of web-based training (WBT) programs, while others involve face-to-face training sessions or workshops.

In 2017, we implemented a new global web-based training program in 67 countries on the subject of data privacy. This program, currently available in ten languages, has already been completed by 57,613 employees as at December 31, 2017.

New hires and employees switching to different areas of responsibility within Bayer undergo training according to their functions.

Handling of suspected and actual compliance violations

Suspected compliance violations can be reported – anonymously if desired and if permitted by respective national law – via a central compliance hotline that has been set up worldwide. It is also accessible to the general public. In 2017, the compliance organization received a total of 245 reports in this way (including 157 anonymous reports), with six reports coming from Germany and 239 from other countries. Alternatively, suspected compliance violations may also be reported to the respective compliance functions in Germany or the country organizations, or to Internal Audit.

Compliance violations at Bayer are systematically sanctioned. The action taken in each case depends on factors including the gravity of the compliance violation and applicable law. All cases are recorded according to uniform criteria throughout the Group and dealt with under the rules set forth in Bayer's Corporate Policy "Management of Compliance Incidents."

Online Annex: A 4.2-3

Where an investigation confirms that a compliance violation has occurred, the company has a graduated set of measures at its disposal. These include a verbal warning or written reprimand, transfer to a different unit, cancellation of a planned promotion, a reduction in the short-term incentive payment, downgrading to a lower collectively agreed pay rate or managerial contract level, and ordinary or extraordinary termination. Bayer also reserves the right to assert further claims against the employee for cost reimbursement or damages and / or initiate criminal proceedings.

Lobbying

As part of our commitment to tackle corruption, our Corporate Policy "Code of Conduct for Responsible Lobbying" sets out binding rules for our involvement in political matters and creates transparency in our collaboration with the representatives of political institutions. We also proactively participate in existing transparency initiatives such as those established by the European institutions or the U.S. Congress.

As set out in our corporate policy on responsible lobbying, we did not make any direct donations to political parties, politicians or candidates for political office in 2017. Some associations of which the Group is a member make donations on their own initiative, in compliance with statutory regulations.

Online Annex: A 4.2-4

www.bayer.de/us-lobbying-disclosure

Our liaison offices in Berlin, Brussels, Washington, Moscow, Brasília and Beijing are key touchpoints between the company and political stakeholders. We publish details of costs, employee numbers and any of the other statistics required in each country in the transparency registers of the European institutions and the U.S. Congress. Bayer goes far beyond the statutory requirements in doing so. For instance, the Group also publishes data for countries such as Germany where there is no legal publication requirement. In 2017, the costs incurred at the liaison offices, including human resources, material and project expenses, totaled approximately €1.35 million in Berlin, Germany; €2.3 million in Brussels, Belgium; €6.97 million in Washington, United States; €0.28 million in Moscow, Russia; €1.5 million in Brasília, Brazil; and €0.82 million in Beijing, China.

www.fec.gov

In the United States, where corporate donations are prohibited by law for federal elections and in many cases also state and local elections, some employees use the Bayer Corporation Political Action Committee (BayPac) to support legislative candidates through private donations. Political action committees are state-regulated, legally independent employee groups. The private donations made by BayPac are regularly reported to the U.S. Federal Election Commission and can be viewed on its website.

4.3 Disclosures pursuant to Section 289b through e and Section 315b and c of the German Commercial Code (HGB)

The index to the nonfinancial statement can be found in A 4.6

The Bayer Group meets the requirements for the nonfinancial statement pursuant to Section 289b through e and Section 315b and c of the German Commercial Code (HGB). The relevant disclosures pertaining to the nonfinancial statement in accordance with the Corporate Social Responsibility Directive Implementation Act (CSR-RUG) are integrated into the management report.

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).

4.4 Compensation Report

The Compensation Report describes the essential features of the compensation packages for the members of the Board of Management and the Supervisory Board of Bayer AG and explains the compensation the individual members were granted or received for the 2017 fiscal year. The report complies with the requirements of the applicable financial reporting standards for publicly traded companies (German Commercial Code [HGB], German Accounting Standards [DRS] and the International Financial Reporting Standard [IFRS]) as well as with the recommendations contained in the current version of the German Corporate Governance Code.

4.4.1 Compensation of the Board of Management

Objective

The compensation system for the Board of Management of Bayer AG applies in the version approved by a large majority at the Annual Stockholders' Meeting on April 29, 2016.

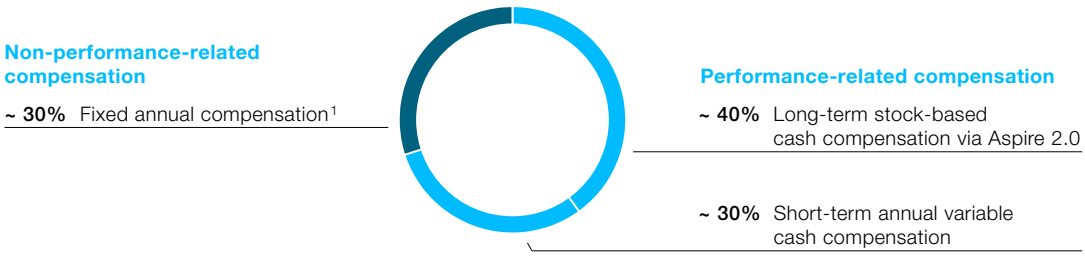
The Bayer Group's compensation system is aligned to the corporate strategy and geared toward performance-driven, sustainable corporate governance and an appropriate compensation structure and level. The nature and appropriateness of the compensation system for the members of the Board of Management are determined by the full Supervisory Board on the proposal of the Human Resources Committee of the Supervisory Board, regularly reviewed and adjusted as necessary. All of the assessment criteria recommended in Section 4.2.2 of the German Corporate Governance Code are taken into account. An independent compensation consultant has confirmed that the compensation is appropriate and on a customary level. The compensation structure in the Bayer Group is, in principle, the same for the Board of Management as for all other managerial employees.

Transparent compensation structure

The compensation paid to members of the Board of Management of Bayer AG comprises a non-performance-related component of about 30% and a performance-related variable component of about 70%. The compensation components under the system are as follows, assuming 100% target attainment by a member of the Board of Management.

A 4.4.1/1

Compensation Structure Based on 100% Target Attainment



[1] Excluding fringe benefits and pension entitlements

The non-performance-related compensation component comprises the fixed annual compensation along with fringe benefits. The variable performance-related compensation components comprise a variable annual cash payment (STI = short-term incentive) based on target attainment, which is paid out in cash in the following year, and a long-term variable cash payment (LTI = long-term incentive). The system for the LTI program is based on stockholder return. The individual performance-related components are capped upon payment. There is also a cap on the total cash compensation. This amounts to 1.8 times the respective target compensation and is determined annually when the fixed compensation is set.

The members of the Board of Management also receive pension entitlements for themselves and their surviving dependents.

Non-performance-related components

Fixed annual compensation

The level of the non-performance-related, fixed annual compensation takes into account the functions and responsibilities assigned to the members of the Board of Management as well as market conditions. The fixed annual compensation is regularly reviewed by the Supervisory Board in light of the consumer price index and adjusted if necessary. It is paid out in twelve monthly installments.

Fringe benefits

This component mainly includes perquisites such as a company car with driver or the use of the company carpool, payments toward the cost of security equipment, and the reimbursement of the cost of annual health screening examinations. Fringe benefits are reported at cost or the amount of the pecuniary advantage gained.

Performance-related components

Short-term variable cash compensation

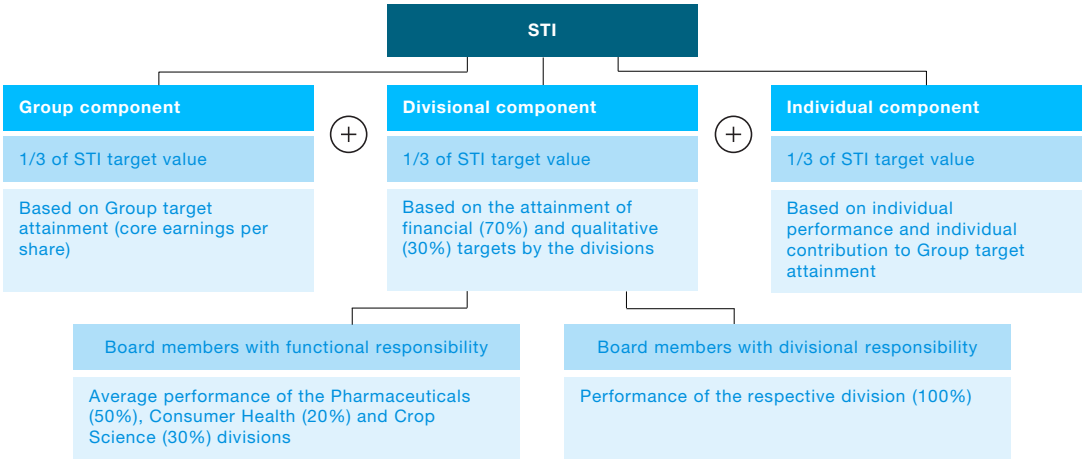
The short-term variable cash compensation (STI) depends on the company's business success in the respective year. The level of the STI is determined by the target attainment for three subcomponents – the Group component, the divisional component and the individual performance component – each of which is given a one-third weighting in the performance evaluation. The performance evaluation takes into account both positive and negative developments.

- The Group component is based on the core earnings per share of the Group and is capped at 200%.
- The divisional component is incentivized based on the weighted average performance of the three divisions and is capped at 300%. For the members of the Board of Management with functional responsibility, this component is based on the average performance of the divisions, weighted as follows: Pharmaceuticals 50%, Consumer Health 20%, Crop Science (including Animal Health) 30%. For the Board members with divisional responsibility, however, this one-third of the STI is incentivized entirely on the basis of the respective division's earnings. The assessment of divisional performance comprises a 70% component linked to the attainment of financial targets in relation to the EBITDA margin before special items and divisional sales growth, and a 30% component based on the attainment of qualitative goals in areas such as innovative progress, safety, compliance and sustainability.
- The target attainment criteria for the individual performance component are based on the duties and resulting personal targets of the respective member of the Board of Management, as well as on his or her individual contribution to the attainment of the Group targets. The individual targets for the members of the Board of Management are determined annually by the Supervisory Board, which also assesses their attainment.

The entire amount of the STI is paid out in cash in the second quarter of the following year and is capped at 200%.

A 4.4.1/2

Short-Term Variable Cash Compensation Components (STI)



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 condition that they purchase a certain number of Bayer shares – determined for each individual according to specific guidelines – as a personal investment and hold them for as long as they continue in the service of the Bayer Group.

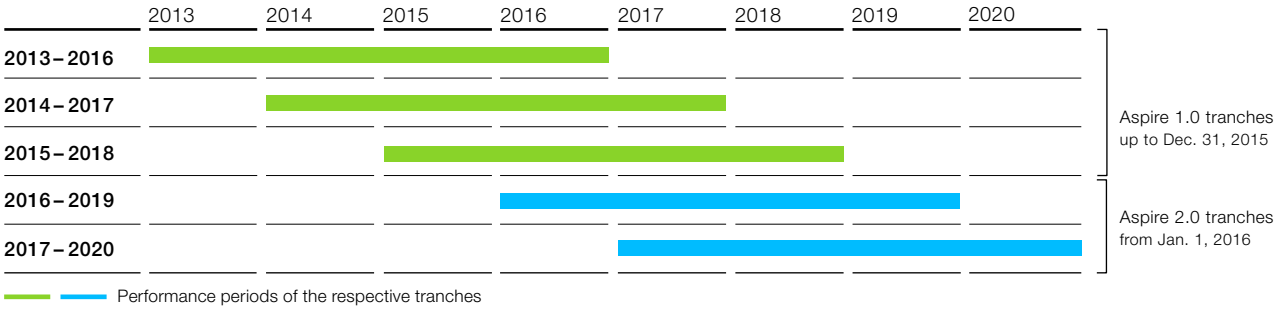
The target amounts for the Aspire 2.0 tranches issued since 2016 are generally based on a contractually agreed target percentage of the fixed annual compensation. The starting value is also partly determined by the individual STI payment factor for the Board member concerned for the year prior to the issuance of the respective tranche. The cash payment amounts are determined after four years based on the average share price calculated over the last 30 trading days of the fiscal year, the performance of Bayer stock relative to the EURO STOXX 50 and the dividends paid in the meantime (total stockholder return approach). As with the other management levels, the cap for Aspire 2.0 is 250%. For the Board of Management, however, an additional performance measure has been included in the LTI program in the form of the comparison with the EURO STOXX 50 mentioned above. This increases or decreases the payout by the percentage of overperformance or underperformance, respectively.

The payments made under the tranches of the Aspire program issued in the years up to 2015 continue to be based until their expiration on the Aspire Target Opportunity, which is a contractually agreed percentage of fixed annual compensation. Depending on the performance of Bayer stock, both in absolute terms and relative to the EURO STOXX 50 benchmark index, participants are granted an award of between 0% and a maximum 300% of their individual Aspire Target Opportunity at the end of the respective performance periods.

The payout/performance matrix according to the absolute and relative development of Bayer's share price is explained at www.investor.bayer.com/en/stock/stock-programs/aspire/.

A 4.4.1/3

Tranches of the Aspire Program



If a member of the Board of Management enters retirement during the year or steps down from the Board of Management during the year due to the nonextension of his or her service contract by mutual agreement or by the company's decision, the Aspire tranche granted for that year is reduced on a prorated basis according to the duration of the member's active service on the Board of Management during this first year of the tranche. In this case, tranches granted for previous years remain in effect without any changes.

Share ownership guidelines

As a condition for receiving payments under the LTI program, members of the Board of Management must meet certain requirements regarding their personal investment in Bayer stock. As of 2016, they have been required to build a position in Bayer shares to the value of 75% of their fixed annual compensation within four years and hold these shares until the end of their service on the Board of Management. The Board of Management members must provide documentary evidence of their compliance with this obligation, first at the end of the four-year position-building period and then yearly thereafter. In the event of significant changes in fixed annual compensation, the value to which shares must be held is adjusted accordingly.

Pension entitlements (retirement and surviving dependents' pensions)

The annual pension entitlement for members of the Board of Management is based on contributions. Each year Bayer provides a hypothetical contribution amounting to 42% of the respective fixed annual compensation. 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 module 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 modules including an investment bonus. The investment bonus 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 annually reviewed and adjusted to take into account the development of consumer prices.

In addition, special individual arrangements exist for the following members of the Board of Management:

- Werner Baumann has been granted a 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.
- Dr. Marijn Dekkers had the option to receive either a lifelong monthly annuity or a capital sum. After leaving the Bayer Group, he opted for the payment of a monthly annuity.

- Kemal Malik has been granted a vested entitlement to an annual pension of €80 thousand starting on his 65th birthday. This is subject to a prorated reduction in the event that his term of office ends prior to his 65th birthday under certain conditions.
- Erica Mann participates in pension plans in Germany (30%) and Switzerland (70%) on a prorated basis in view of her split service contract. As regards the payment of pension benefits from her two pension plans, Ms. Mann has the option to receive either a lifelong monthly annuity or a capital sum when her pension benefits fall due.

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.

Benefits upon termination of service on the Board of Management

Post-contractual noncompete agreements

Post-contractual noncompete agreements exist with the members of the Board of Management, providing for compensatory payments to be made by the company for the two-year duration of these agreements. The compensatory payment amounts to 100% of the average fixed compensation for the twelve months preceding their departure.

Change of control

Agreements exist with the members of the Board of Management providing for severance indemnity in certain circumstances in the event of a change in control. The amount of any possible severance indemnity in the case of early termination of service on the Board of Management as a result of a change in control is limited to the value of three years' compensation in line with the recommendation in Section 4.2.3 of the German Corporate Governance Code. Such payments do not exceed the compensation payable for the remaining term of the service contract.

Unfitness for work

In the event of temporary unfitness for work, members of the Board of Management continue to receive the contractually agreed compensation. Bayer AG may early terminate the service contract if the Board 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). A disability pension is paid in the event of contract termination before the age of 60 due to permanent incapacity to work. For members of the Board of Management, the amount of the disability pension under the service contract corresponds to the entitlement accrued on the date of contract termination, taking into account a fictitious period of service between that date and the member's 55th birthday, where applicable.

Compensation of the Board of Management in 2017

The aggregate compensation for the members of the Board of Management in 2017 totaled €24,324 thousand (2016: €28,445 thousand), comprising €6,414 thousand (2016: €7,049 thousand) in non-performance-related components and €17,910 thousand (2016: €21,396 thousand) in performance-related components. The pension service cost amounted to €2,546 thousand (2016: €2,887 thousand).

As of December 31, 2017, the Board of Management of Bayer AG consisted of seven members. There were no changes in the membership of the Board of Management in 2017.

Effective April 26, 2018, the Supervisory Board has appointed Wolfgang Nickl as member of the Board of Management of Bayer AG. He will succeed Johannes Dietsch as Chief Financial Officer of Bayer AG on June 1, 2018.

Effective March 1, 2018, the Supervisory has appointed Heiko Schipper as a member of the Board of Management of Bayer AG and, from April 1, 2018, head of the Consumer Health Division, succeeding Erica Mann.

The following table shows the aggregate compensation of the individual members of the Board of Management who served in 2016 and / or 2017 according to the German Commercial Code:

A 4.4.1/4

Board of Management Compensation (German Commercial Code)

	Fixed annual compensation		Fringe benefits		Short-term variable cash compensation		Long-term stock-based cash compensation (Aspire) [1]		Aggregate compensation		Pension service cost [2]	
€ thousand	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017	2016	2017
Serving members of the Board of Management as of December 31, 2017												
Werner Baumann (Chairman)	1,285	1,487	47	49	2,329	1,335	1,983	3,530	5,644	6,401	764	809
Liam Condon	800	806	44	43	1,106	519	1,624	1,677	3,574	3,045	330	320
Johannes Dietsch	750	756	83	42	978	679	1,522	1,483	3,333	2,960	318	305
Dr. Hartmut Klusik	750	756	140	40	1,053	565	1,522	1,597	3,465	2,958	316	305
Kemal Malik	775	781	35	36	1,050	604	1,573	1,591	3,433	3,012	318	310
Erica Mann [3]	750	756	182	24	798	378	1,522	1,210	3,252	2,368	219	257
Dieter Weinand	800	806	34	32	1,274	810	1,623	1,932	3,731	3,580	240	240
Former member												
Dr. Marijn Dekkers [4]	475	–	99	–	475	–	964	–	2,013	–	382	–
Total	**6,385**	**6,148**	**664**	**266**	**9,063**	**4,890**	**12,333**	**13,020**	**28,445**	**24,324**	**2,887**	**2,546**

[1] Fair value at grant date; for Dr. Marijn Dekkers, 4/12 of the grant amount for Aspire 2.0 was shown in 2016.
[2] Including company contributions to Bayer-Pensionskasse VVaG, Rheinische Pensionskasse VVaG and to a pension fund outside Germany
[3] It has been agreed that Erica Mann will receive a severance payment of €1,978 thousand in view of her leaving the company effective March 31, 2018. This puts her in the same position as if she had held office until December 31, 2018, and had then retired.
[4] Dr. Marijn Dekkers additionally received a severance payment of €4,341 thousand. This puts him in the same position as if he had held office regularly until December 31, 2016, and had then retired.

Fixed annual compensation

The fixed annual compensation of the members of the Board of Management was adjusted in 2017. The total fixed annual compensation of all the members was €6,148 thousand (2016: €6,385 thousand).

Short-term variable cash compensation

The total short-term variable cash compensation for all the members of the Board of Management in 2017 totaled €4,890 thousand (2016: €9,063 thousand) after deduction of the solidarity contribution. Provisions of €4,890 thousand (2016: €8,588 thousand) were established for payment of this compensation component to the members of the Board of Management serving as of December 31, 2017. The solidarity contribution is made by all employees of the companies covered by the respective agreements with the employee representatives to help safeguard jobs at the German sites. For 2017 it amounted to 0.25% (2016: 0.27%) of each person's STI award.

Long-term variable cash compensation based on virtual Bayer shares

This compensation component no longer exists following the adjustment of the compensation system for the Board of Management effective January 1, 2016. The conversion of 50% of the STI into virtual Bayer shares took place for the last time in 2015 and was based on an average price of €119.17. The aggregate compensation for 2017 according to the IFRS includes a change of €538 thousand (2016: minus €1,275 thousand) in the value of existing entitlements. Provisions of €6,841 thousand (2016: €7,777 thousand) existed as of December 31, 2017, for the future cash disbursements to currently serving members of the Board of Management based on the virtual

Bayer shares granted in previous years. This amount also contains the dividend entitlements attributable to the respective prior years.

Long-term stock-based cash compensation (Aspire)

The long-term stock-based cash compensation under the Aspire program is included in the aggregate compensation according to the German Commercial Code at its fair value of €13,020 thousand (2016: €12,333 thousand) at the respective grant date.

The aggregate compensation according to the IFRS includes the fair value of the partial entitlement earned in the respective year. Grants of stock-based compensation with a four-year performance period are therefore expensed at their respective fair values over four years starting with the grant year. The stock-based compensation according to the IFRS also includes the change in the value of existing entitlements under ongoing Aspire tranches granted in prior years.

A 4.4.1/5

Board of Management Compensation – Aspire Program (IFRS)

		Serving members of the Board of Management as of December 31, 2017							Former member	
€ thousand		**Werner Baumann (Chairman)**	**Liam Condon**	**Johannes Dietsch**	**Dr. Hartmut Klusik**	**Kemal Malik**	**Erica Mann**	**Dieter Weinand**	**Dr. Marijn Dekkers**	**Total**
Stock-based compensation entitlements earned in the respective year[1]	2017	1,528	871	2,038	819	830	2,049	947	–	9,082
	2016	715	506	413	414	431	848	369	1,521	5,217
Change in value of existing entitlements[2]	2017	(120)	(77)	(51)	(42)	(58)	(240)	(53)	–	(641)
	2016	(120)	(83)	(57)	(47)	(98)	(165)	(69)	(284)	(923)
Total	**2017**	**1,408**	**794**	**1,987**	**777**	**772**	**1,809**	**894**	**–**	**8,441**
	2016	595	423	356	367	333	683	300	1,237	4,294

[1] The newly earned entitlements are derived from the 2014 – 2017 (2016: 2013 – 2016) tranches of the Aspire program because this compensation was or is being earned over a four-year period. They are stated at their prorated fair values in 2016 and 2017, respectively. Johannes Dietsch and Erica Mann are earning their entitlements at an accelerated rate until they leave the company on May 31, 2018, and March 31, 2018, respectively. Accordingly, the proportion earned in 2017 is higher than in the prior year. The Aspire entitlements earned in 2016 and 2017 and the value changes for Liam Condon, Johannes Dietsch, Dr. Hartmut Klusik, Kemal Malik, Erica Mann and Dieter Weinand relate in part to Aspire tranches granted to them before they joined the Board of Management but not yet fully earned.

[2] This line shows the change in the value of the entitlements already earned in 2014, 2015 and 2016 (2016: 2013, 2014 and 2015).

Provisions of €11,747 thousand (2016: €7,288 thousand) were established for the Aspire entitlements of the members of the Board of Management serving as of December 31, 2017. Of this amount, €6,048 thousand relates to the tranches issued up to 2016 and €5,699 thousand to the 2017 tranche.

Pension entitlements

The pension service cost recognized for the members of the Board of Management in 2017 according to the German Commercial Code was €2,546 thousand (2016: €2,887 thousand), while the current service cost for pension entitlements recognized according to the IFRS was €3,907 thousand (2016: €3,902 thousand). The following table shows the service cost and the settlement or present value of the pension obligations attributable to the individual members of the Board of Management.

A 4.4.1/6

Pension Entitlements (German Commercial Code and IFRS)

	German Commercial Code				IFRS			
	Pension service cost [1]		Settlement value of pension obligation as of December 31 [2]		Current service cost for pension entitlements		Present value of defined benefit pension obligation as of December 31	
€ thousand	2016	2017	2016	2017	2016	2017	2016	2017
Serving members of the Board of Management as of December 31, 2017								
Werner Baumann (Chairman)	764	809	7,452	9,044	1,054	1,290	12,429	13,544
Liam Condon	330	320	2,151	2,345	487	563	3,860	4,038
Johannes Dietsch	318	305	2,854	3,951	431	483	4,882	5,919
Dr. Hartmut Klusik	316	305	4,533	5,302	399	435	6,782	7,285
Kemal Malik	318	310	1,990	2,186	438	493	2,507	2,697
Erica Mann	219	257	7,199	7,492	288	275	7,232	7,532
Dieter Weinand	240	240	468	700	322	368	735	988
Former member								
Dr. Marijn Dekkers [3]	382	–	–	–	483	–	–	–
Total	**2,887**	**2,546**	**26,647**	**31,020**	**3,902**	**3,907**	**38,427**	**42,003**

[1] Including company contribution to Bayer-Pensionskasse VVaG, Rheinische Pensionskasse VVaG and a pension fund outside Germany
[2] The pension obligations of foreign subsidiaries and foreign Bayer pension funds are included at present value according to IFRS.
[3] Dr. Marijn Dekkers stepped down from the Board of Management as of midnight on April 30, 2016.

The difference between the pension service cost according to the German Commercial Code and the service cost for pension entitlements according to the IFRS arises from the difference in the valuation principles used in calculating the settlement value according to the German Commercial Code and the present value of the defined benefit pension obligation according to the IFRS.

Benefits upon termination of service on the Board of Management

It was agreed with Erica Mann that she be granted a severance package worth €1,978 thousand in light of the mutually agreed early termination, effective March 31, 2018, of her service contract, which originally ran until December 31, 2018. This package primarily comprises severance payments for fixed compensation, short-term variable compensation components, Aspire and payments for pension entitlements, each for the period April 1, 2018, through December 31, 2018. Erica Mann's entitlements under the company pension plan and the Aspire program were set at the levels they would have reached if she had been eligible to participate until December 31, 2018. The severance payment for her fixed compensation and the short-term variable compensation component, together amounting to €1,172 thousand, will be paid in April 2018. The payments from the Aspire tranches will be made upon expiration of each tranche based on the respective Aspire program parameters. In addition, a noncompete agreement ending on December 31, 2018, exists with Erica Mann.

It was agreed with Dr. Marijn Dekkers that he be granted benefits of €4,341 thousand according to the German Commercial Code and €4,542 thousand according to the IFRS in light of the mutually agreed early termination, effective April 30, 2016, of his service contract, which originally ran until December 31, 2016. These comprised the fixed compensation, the short-term variable compensation components, Aspire and the pension service cost, each for the period May 1, 2016, through December 31, 2016. Dr. Dekkers' entitlements under the company pension plan and the Aspire program were set at the levels they would have reached if he had been eligible to participate until December 31, 2016. The fixed compensation and the short-term variable compensation component, together amounting to €1,900 thousand, were paid in May 2016. The payments from the Aspire tranches will be made upon expiration of each tranche based on the respective Aspire program parameters.

The aggregate Board of Management compensation according to the IFRS is shown in the following table.

Table A 4.4.1/7

Board of Management Compensation according to IFRS

€ thousand	2016	2017
Fixed annual compensation	6,385	6,148
Fringe benefits	664	266
Total short-term non-performance-related compensation	**7,049**	**6,414**
Short-term performance-related cash compensation	9,063	4,890
Total short-term compensation	**16,112**	**11,304**
Change in value of existing entitlements to stock-based compensation (virtual Bayer shares)	(1,275)	538
Stock-based compensation (Aspire) earned in the respective year	5,217	9,082
Change in value of existing entitlements to stock-based compensation (Aspire)	(923)	(641)
Total stock-based compensation (long-term incentive)	**3,019**	**8,979**
Service cost for pension entitlements earned in the respective year	3,902	3,907
Total long-term compensation	**6,921**	**12,886**
Severance indemnity in connection with the termination of a service contract	4,542	1,978
Aggregate compensation (IFRS)	**27,575**	**26,168**

4.4.2 Disclosures Pursuant to the Recommendations of the German Corporate Governance Code

In accordance with the recommendations of the German Corporate Governance Code, the following tables show the compensation – including fringe benefits – granted for 2017, indicating the target values and the maximum and minimum achievable values for the variable compensation components, along with the allocation of compensation.

A 4.4.2/1

Compensation and Benefits Granted for 2017 (Part I)

	Serving members of the Board of Management as of December 31, 2017											
	Werner Baumann (Chairman)				Liam Condon (Crop Science)				Johannes Dietsch (Finance)			
	Joined Jan. 1, 2010				Joined Jan. 1, 2016				Joined Sept. 1, 2014			
€ thousand	Target value 2016	Target value 2017	Min. 2017	Max.[1] 2017	Target value 2016	Target value 2017	Min. 2017	Max.[1] 2017	Target value 2016	Target value 2017	Min. 2017	Max.[1] 2017
Fixed annual compensation	1,285	1,487	1,487	1,487	800	806	806	806	750	756	756	756
Fringe benefits	47	49	49	49	44	43	43	43	83	42	42	42
Total fixed annual compensation	**1,332**	**1,536**	**1,536**	**1,536**	**844**	**849**	**849**	**849**	**833**	**798**	**798**	**798**
Short-term variable cash compensation	1,475	1,487	0	2,974	800	806	0	1,613	750	756	0	1,512
Long-term stock-based compensation (Aspire)												
2016 (Jan. 1, 2016 – Dec. 31, 2019)	1,983				1,624				1,522			
2017 (Jan. 1, 2017 – Dec. 31, 2020)		3,530	0	8,826		1,677	0	4,191		1,483	0	3,708
Total	**4,790**	**6,553**	**1,536**	**13,336**	**3,268**	**3,332**	**849**	**6,653**	**3,105**	**3,037**	**798**	**6,018**
Service cost / benefit expense	764	809	809	809	330	320	320	320	318	305	305	305
Total compensation	**5,554**	**7,362**	**2,345**	**14,145**	**3,598**	**3,652**	**1,169**	**6,973**	**3,423**	**3,342**	**1,103**	**6,323**

A 4.4.2/1 (continued)

Compensation and Benefits Granted for 2017 (Part II)

	Serving members of the Board of Management as of December 31, 2017											
	Dr. Hartmut Klusik (Human Resources, Technology & Sustainability)				Kemal Malik (Innovation)				Erica Mann[2] (Consumer Health)			
	Joined Jan. 1, 2016				Joined Feb. 1, 2014				Joined Jan. 1, 2016			
€ thousand	Target value 2016	Target value 2017	Min. 2017	Max.[1] 2017	Target value 2016	Target value 2017	Min. 2017	Max.[1] 2017	Target value 2016	Target value 2017	Min. 2017	Max.[1] 2017
Fixed annual compensation	750	756	756	756	775	781	781	781	750	756	756	756
Fringe benefits	140	40	40	40	35	36	36	36	182	24	24	24
Total fixed annual compensation	**890**	**796**	**796**	**796**	**810**	**817**	**817**	**817**	**932**	**780**	**780**	**780**
Short-term variable cash compensation	750	756	0	1,512	775	781	0	1,562	750	756	0	1,512
Long-term stock-based compensation (Aspire)												
2016 (Jan. 1, 2016 – Dec. 31, 2019)	1,522				1,573				1,522			
2017 (Jan. 1, 2017 – Dec. 31, 2020)		1,597	0	3,992		1,591	0	3,978		1,210	0	3,025
Total	**3,162**	**3,149**	**796**	**6,300**	**3,158**	**3,189**	**817**	**6,357**	**3,204**	**2,746**	**780**	**5,317**
Service cost / benefit expense	316	305	305	305	318	310	310	310	219	257	257	257
Total compensation	**3,478**	**3,454**	**1,101**	**6,605**	**3,476**	**3,499**	**1,127**	**6,667**	**3,423**	**3,003**	**1,037**	**5,574**

A 4.4.2/1 (continued)

Compensation and Benefits Granted for 2017 (Part III)

	Serving members of the Board of Management as of December 31, 2017				Former member			
	Dieter Weinand (Pharmaceuticals)				Dr. Marijn Dekkers			
	Joined Jan. 1, 2016				Stepped down April 30, 2016			
€ thousand	Target value 2016	Target value 2017	Min. 2017	Max.[1] 2017	Target value 2016	Target value 2017	Min. 2017	Max.[1] 2017
Fixed annual compensation	800	806	806	806	**475**	–	–	–
Fringe benefits	34	32	32	32	99	–	–	–
Total fixed annual compensation	**834**	**838**	**838**	**838**	**574**	**–**	**–**	**–**
Short-term variable cash compensation	800	806	0	1,613	475	–	–	–
Long-term stock-based compensation (Aspire)								
2016 (Jan. 1, 2016 – Dec. 31, 2019)	1,623				964	–	–	–
2017 (Jan. 1, 2017 – Dec. 31, 2020)		1,932	0	4,829		–	–	–
Total	**3,257**	**3,576**	**838**	**7,280**	**2,013**	**–**	**–**	**–**
Service cost / benefit expense	240	240	240	240	382	–	–	–
Total compensation	**3,497**	**3,816**	**1,078**	**7,520**	**2,395**	**–**	**–**	**–**

[1] The maximum achievable variable compensation shown here does not yet take into account the caps applicable. Payments in a single year are limited to 1.8 times the target compensation (see A 4.4.1 "Compensation Structure").
[2] In December 2017, Erica Mann was additionally awarded a severance payment of €1,978 thousand.

A 4.4.2/2

Allocation of Compensation for 2016 and 2017 (Part I)

	Serving members of the Board of Management as of December 31, 2017							
	Werner Baumann (Chairman)		Liam Condon (Crop Science)		Johannes Dietsch (Finance)		Dr. Hartmut Klusik (Human Resources, Technology & Sustainability)	
	Joined Jan. 1, 2010		Joined Jan. 1, 2016		Joined Sept. 1, 2014		Joined Jan. 1, 2016	
€ thousand	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Fixed annual compensation	1,285	1,487	800	806	750	756	750	756
Fringe benefits	47	49	44	43	83	42	140	40
Total	**1,332**	**1,536**	**844**	**849**	**833**	**798**	**890**	**796**
Short-term variable cash compensation								
for 2016	2,329		1,106		978		1,053	
for 2017		1,335		519		679		565
Long-term cash compensation (virtual Bayer shares)								
2012 (Jan. 1, 2013 – Dec. 31, 2015)	1,747							
2013 (Jan. 1, 2014 – Dec. 31, 2016)		911		564				
Long-term stock-based cash compensation (Aspire)[1]								
2012 (Jan. 1, 2012 – Dec. 31, 2015)	789				301			
2013 (Jan. 1, 2013 – Dec. 31, 2016)		959		513		279		312
Total	**6,197**	**4,741**	**1,950**	**2,445**	**2,112**	**1,756**	**1,943**	**1,673**
Service cost / benefit expense[2]	764	809	330	320	318	305	316	305
Total compensation	**6,961**	**5,550**	**2,280**	**2,765**	**2,430**	**2,061**	**2,259**	**1,978**

A 4.4.2/2 (continued)

Allocation of Compensation for 2016 and 2017 (Part II)

	Serving members of the Board of Management as of December 31, 2017						Former member	
	Kemal Malik (Innovation)		Erica Mann (Consumer Health)		Dieter Weinand (Pharmaceuticals)		Dr. Marijn Dekkers	
	Joined Feb. 1, 2014		Joined Jan. 1, 2016		Joined Jan. 1, 2016		Stepped down April 30, 2016	
€ thousand	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Fixed annual compensation	775	781	750	756	800	806	475	–
Fringe benefits	35	36	182	24	34	32	99	–
Total	**810**	**817**	**932**	**780**	**834**	**838**	**574**	**–**
Short-term variable cash compensation								
for 2016	1,050		798		1,274		475	–
for 2017		604		378		810		–
Long-term cash compensation (virtual Bayer shares)								
2012 (Jan. 1, 2013 – Dec. 31, 2015)							3,039	–
2013 (Jan. 1, 2014 – Dec. 31, 2016)								–
Long-term stock-based cash compensation (Aspire)[1]								
2012 (Jan. 1, 2012 – Dec. 31, 2015)	364						1,495	–
2013 (Jan. 1, 2013 – Dec. 31, 2016)		303		1,596				–
Total	**2,224**	**1,724**	**1,730**	**2,754**	**2,108**	**1,648**	**5,583**	**–**
Service cost / benefit expense[2]	318	310	219	257	240	240	382	–
Total compensation	**2,542**	**2,034**	**1,949**	**3,011**	**2,348**	**1,888**	**5,965**	**–**

[1] The payment to Johannes Dietsch and Kemal Malik from the 2012 Aspire tranche related to vesting periods that in some cases began before they joined the Board of Management. The tranches were not yet fully vested at the dates on which they joined the Board of Management. The same applies to the payments in 2017 from the 2013 Aspire tranche for Johannes Dietsch, Liam Condon, Dr. Hartmut Klusik, Kemal Malik and Erica Mann.

[2] The total service cost is the service cost in accordance with HGB plus contributions to pension funds.

4.4.3 Compensation of the Supervisory Board

The Supervisory Board is compensated based on the relevant provisions of the Articles of Incorporation, which were approved by a large majority at the Annual Stockholders' Meeting on April 28, 2017. The compensation of the Supervisory Board was thus increased by 10% with effect from April 29, 2017.

The members of the Supervisory Board now receive fixed annual compensation of €132 thousand (2016: €120 thousand) plus reimbursement of their expenses.

In accordance with the recommendations of the German Corporate Governance Code, additional compensation is paid to the Chairman and Vice Chairman of the Supervisory Board and for chairing and membership of committees. As of April 29, 2017, the Chairman of the Supervisory Board receives fixed annual compensation of €396 thousand (2016: €360 thousand), the Vice Chairman €264 thousand (2016: €240 thousand). These amounts also cover membership and chairmanship of committees. The other members receive additional compensation for committee membership. The chairman of the Audit Committee receives an additional €132 thousand (2016: €120 thousand), the other members of the Audit Committee €66 thousand (2016: €60 thousand) each. The chairmen of the remaining committees receive €66 thousand (2016: €60 thousand) each, the other members of those committees €33 thousand (2016: €30 thousand) each. As before, no additional compensation is paid for membership of the Nominations Committee. A Supervisory Board member who is a member of more than two committees receives compensation only for the two committees with the highest compensation. If changes are made to the Supervisory Board and / or its committees during the year, members receive compensation on a prorated basis. As in the past, the members of the Supervisory Board also receive an attendance fee of €1 thousand each time they personally attend a meeting of the Supervisory Board or a committee. The attendance fee is limited to €1 thousand per day.

The members of the Supervisory Board have given a voluntary pledge that they will each purchase Bayer shares for 25% of their pretax fixed compensation, including any additional compensation for committee membership, and hold these shares for as long as they remain members of the Supervisory Board. This does not apply to members who are prevented from purchasing shares due to a service or employment contract with a company or who transfer at least 85% of their fixed compensation to the Hans Böckler Foundation in accordance with the rules of the German Trade Union Confederation or whose service or employment contract with a company requires them to transfer such compensation to that company. If less than 85% of the fixed compensation is transferred, the voluntary pledge applies to the portion not transferred. The obligation to purchase Bayer shares was adjusted in 2017 and now only applies for the first five years of membership of the Supervisory Board; these shares must then be held until membership of the Supervisory Board ceases. Bayer shares acquired prior to 2017 in connection with the voluntary pledge are taken into account for this purpose. By voluntarily pledging to invest in and hold Bayer shares, the Supervisory Board members reinforce their interest in the long-term, sustainable success of the company.

Compensation of the Supervisory Board in 2017

The following table shows the components of each Supervisory Board member's compensation for 2017.

A 4.4.3/1

Compensation of the Members of the Supervisory Board of Bayer AG in 2017

	Fixed compensation		Attendance fee		Total	
€ thousand	2016	2017	2016	2017	2016	2017
Members of the Supervisory Board serving as of December 31, 2017						
Dr. Paul Achleitner	180	192	5	5	185	197
Dr. Simone Bagel-Trah	120	128	5	3	125	131
Dr. Norbert W. Bischofberger [1]	–	92	–	3	–	95
André van Broich	150	170	5	6	155	176
Thomas Ebeling	120	128	4	4	124	132
Dr. Thomas Elsner [1]	–	134	–	7	–	141
Johanna W. (Hanneke) Faber	81	128	2	4	83	132
Colleen A. Goggins [1]	–	90	–	3	–	93
Heike Hausfeld [1]	–	112	–	4	–	116
Reiner Hoffmann	127	128	5	2	132	130
Frank Löllgen	173	192	8	8	181	200
Prof. Dr. Wolfgang Plischke	162	256	5	8	167	264
Petra Reinbold-Knape	180	192	5	4	185	196
Detlef Rennings [2]	–	76	–	3	–	79
Sabine Schaab [3]	–	36	–	3	–	39
Michael Schmidt-Kießling	120	128	4	5	124	133
Dr. Klaus Sturany	240	256	9	9	249	265
Werner Wenning (Chairman)	360	384	9	10	369	394
Prof. Dr. Otmar D. Wiestler	150	160	4	6	154	166
Oliver Zühlke (Vice Chairman)	240	256	9	8	249	264
Members who left the Supervisory Board in 2016 and 2017						
Dr. Clemens Börsig [4]	120	39	5	2	125	41
Dr. Thomas Fischer [4]	180	58	9	4	189	62
Yüksel Karaaslan [5]	150	65	5	2	155	67
Petra Kronen [6]	150	105	4	3	154	108
Dr. Helmut Panke [7]	59	–	4	–	63	–
Sue H. Rataj [4]	120	39	5	2	125	41
Heinz Georg Webers [4]	120	39	5	2	125	41
Prof. Dr. Dr. Ernst-Ludwig Winnacker [7]	59	–	2	–	61	–
Total	**3,361**	**3,583**	**118**	**120**	**3,479**	**3,703**

[1] Member of the Supervisory Board since April 28, 2017
[2] Member of the Supervisory Board since June 4, 2017
[3] Member of the Supervisory Board since October 1, 2017
[4] Member of the Supervisory Board until April 28, 2017
[5] Member of the Supervisory Board until June 4, 2017
[6] Member of the Supervisory Board until September 30, 2017
[7] Member of the Supervisory Board until April 29, 2016

In addition to their compensation as members of the Supervisory Board, those employee representatives who are employees of Bayer Group companies receive compensation unrelated to their service on the Supervisory Board. The total amount of such compensation in 2017 was €767 thousand (2016: €939 thousand).

No compensation was paid or benefits granted to members of the Supervisory Board for personally performed services such as consultancy or agency services. The company has purchased

insurance for the members of the Supervisory Board to cover their personal liability arising from their service on the Supervisory Board.

4.4.4 Further Information

Advances or loans to members of the Board of Management or Supervisory Board

There were no advances or loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 2017, nor at any time during 2017 or 2016.

Pension payments to former members of the Board of Management or their surviving dependents

We currently pay retired members of the Board of Management a monthly pension equal to a maximum of 80% of the fixed compensation received immediately prior to retirement. The pensions paid to former members of the Board of Management or their surviving dependents are reassessed annually and adjusted, taking into account the development of consumer prices. The pensions paid to former members of the Board of Management or their surviving dependents in 2017 totaled €12,758 thousand (2016: €12,800 thousand). These benefits are paid in addition to any amounts they receive under previous employee pension arrangements. The present value of the defined benefit pension obligation for former members of the Board of Management and their surviving dependents according to the IFRS amounted to €184,479 thousand (2016: €188,850 thousand), while the settlement value of the pension obligation according to the German Commercial Code amounted to €153,388 thousand (2016: €149,948 thousand).

4.5 Takeover-Relevant Information

Explanatory report pursuant to Section 289a, Paragraph 1 and Section 315a, Paragraph 1 of the German Commercial Code (HGB)

See also
www.bayer.com/
ownership-structure

The capital stock of Bayer AG amounted as of December 31, 2017, to €2,117 million, divided into 826,947,808 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 2017 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.

The appointment and dismissal of members of the Board of Management are subject to the provisions of Sections 84 and 85 of the German Stock Corporation Act, Section 31 of the German Codetermination Act and Section 6 of the company's Articles of Incorporation. Pursuant to Section 84, Paragraph 1 of the German Stock Corporation Act, the members of the Board of Management are appointed and dismissed by the Supervisory Board. Since Bayer AG falls within the scope of the German Codetermination Act, the appointment or dismissal of members of the Board of Management requires a majority of two thirds of the votes of the members of the Supervisory Board on the first ballot pursuant to Section 31, Paragraph 2 of that act. If no such majority is achieved, the appointment is resolved pursuant to Section 31, Paragraph 3 of the Codetermination Act on a second ballot by a simple majority of the votes of the members of the Supervisory Board. If the required majority still is not achieved, a third ballot is held. Here again, a simple majority of the votes suffices, but in this ballot the Chairman of the Supervisory Board has two votes pursuant to Section 31, Paragraph 4 of the Codetermination Act. Under Section 6, Paragraph 1 of the Articles of Incorporation of Bayer AG, the number of members of the Board of Management is determined by the Supervisory Board but must be at least two. The Supervisory Board may appoint one member of the Board of Management to be the Chairman of the Board of Management pursuant to Section 84, Paragraph 2 of the German Stock Corporation Act and Section 6, Paragraph 1 of the Articles of Incorporation.

Any amendments to the Articles of Incorporation are made pursuant to Section 179 of the German Stock Corporation Act and Sections 10 and 17 of the Articles of Incorporation. Under Section 179, Paragraph 1 of the German Stock Corporation Act, amendments to the Articles of Incorporation require a resolution of the Stockholders' Meeting. Pursuant to Section 179, Paragraph 2 of the German Stock Corporation Act, this resolution must be passed by a majority of three quarters of the voting capital represented at the meeting, unless the Articles of Incorporation provide for a different majority. However, where an amendment relates to a change in the object of the company, the Articles of Incorporation may only specify a larger majority. Section 17, Paragraph 2 of the Articles of Incorporation of Bayer AG utilizes the scope for deviation pursuant to Section 179, Paragraph 2 of the German Stock Corporation Act and provides that resolutions may be passed by a simple majority of the votes cast or, where a capital majority is required, by a simple majority of the capital represented. Pursuant to Section 10, Paragraph 9 of the Articles of Incorporation, the Supervisory Board may resolve on amendments to the Articles of Incorporation that relate solely to their wording.

Provisions of the Articles of Incorporation concerning Authorized Capital I and Authorized Capital II are entered in the commercial register of Bayer AG. With the approval of the Supervisory Board and until April 28, 2019, the Board of Management may use the Authorized Capital I to increase the capital stock by up to a total of €530 million. New shares may be issued against cash contributions and / or contributions in kind, but capital increases against contributions in kind may not exceed a total of €423 million. If the Authorized Capital I is used to issue shares in return for cash contributions, stockholders must normally be granted subscription rights. The Board of Management may only exclude stockholders' subscription rights to a volume of shares issued out of the Authorized Capital I that did not represent more than 20% of the existing capital stock at the time the respective resolution was adopted by the Annual Stockholders' Meeting on April 29, 2014. Absent a further resolution on the exclusion of stockholders' subscription rights, the Board of Management also may only exclude stockholders' subscription rights to a volume of shares issued under other authorizations regarding capital measures (Authorized Capital II, bonds with warrants or convertible notes, purchase and disposal of own shares) that did not represent more than 20% of the existing capital stock at the time the respective resolution was adopted by the Annual Stockholders' Meeting on April 29, 2014.

With the approval of the Supervisory Board and until April 28, 2019, the Board of Management is authorized to increase the capital stock by up to €212 million in one or more installments by issuing shares out of the Authorized Capital II against cash contributions. The stockholders must normally be granted subscription rights. However, the Board of Management is authorized, with the approval of the Supervisory Board, to exclude subscription rights for stockholders provided the volume of shares issued out of the Authorized Capital II against cash contributions does not exceed 10% of the capital stock existing at the time this authorization is registered or at the time the new shares are issued and the issue price of the new shares is not significantly below the market price of the already listed shares.

Conditional capital of €212 million exists in connection with an authorization – valid through April 28, 2019 – to issue bonds with warrants or convertible notes, profit-sharing rights or profit participation bonds (collectively referred to as "bonds") with a total face value of €6 billion, €4 billion of which has already been used for mandatory convertible notes. The Board of Management may, with the consent of the Supervisory Board and under certain conditions, exclude the bond subscription rights that would otherwise be granted to stockholders. One of the conditions is that the total volume of shares required to service the bonds exceed neither 10% of the capital stock that existed at the time the respective resolution was adopted by the Annual Stockholders' Meeting on April 29, 2014, nor 10% of the capital stock existing at the time this authorization is exercised. Any other shares issued without granting subscription rights to the stockholders in direct or analogous application of Section 186, Paragraph 3, Sentence 4 of the German Stock Corporation Act shall be credited against this 10% limit.

Further, by resolution of the Annual Stockholders' Meeting on April 29, 2014, the Board of Management is authorized to purchase and dispose of own shares representing up to 10% of the capital stock existing at the time the resolution was adopted. 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. This authorization also expires on April 28, 2019.

A material agreement that is subject to the condition precedent of a change of control pertains to the undrawn €3.5 billion syndicated credit facility arranged by Bayer AG and its U.S. subsidiary Bayer Corporation. This facility is available until December 2020. The participating banks are entitled to terminate the credit facility in the event of a change of control at Bayer and demand repayment of any loans that may have been granted under this facility up to that time.

A similar clause is also contained in the agreement on a syndicated credit facility in the original amount of US$56.9 billion granted to Bayer US Finance II LLC and Bayer AG in September 2016. This facility, which remained undrawn as of December 31, 2017, serves to finance the planned acquisition of Monsanto. Pursuant to the agreement, it was reduced in 2016 by the US$4.2 billion net proceeds from the issuance of mandatory convertible notes, to US$52.7 billion, and in June 2017 by the US$1.2 billion net proceeds from the issuance of an exchangeable bond, to US$51.5 billion. The mandatory convertible notes were issued by Bayer Capital Corporation B.V., guaranteed by Bayer AG and mature in November 2019. The terms on which holders may convert the notes into shares before the maturity date are more favorable in the event of a change of control than they would be otherwise. The exchangeable bond was issued by Bayer AG and matures in 2020, and Bayer AG can flexibly exchange bonds for cash, Covestro AG shares or a combination of the two. Holders of these notes have the right to demand the redemption of unexchanged notes by Bayer AG in the event of a change of control if Bayer AG's credit rating is downgraded within 120 days after such change of control becomes effective.

The terms of the nominal €2.0 billion (as of December 31, 2017) in notes issued by Bayer in the years 2006 to 2017 under its existing Debt Issuance Programme also contain a corresponding change-of-control clause. The terms of the US$7 billion bond in 144A/Reg S format issued in October 2014 also contain a clause to this effect. The outstanding amount of this bond as of December 31, 2017, was US$5.3 billion.

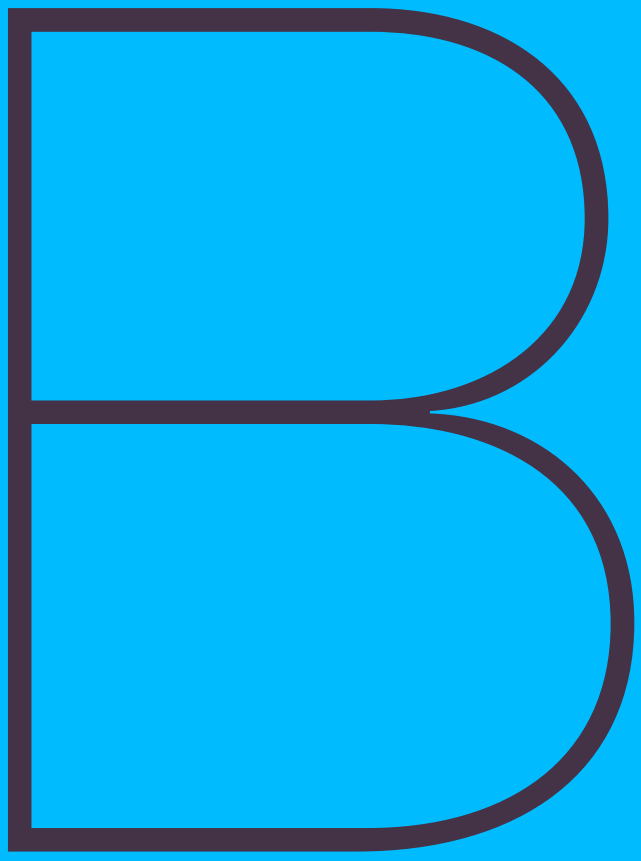
Agreements exist for the members of the Board of Management in compliance with Section 4.2.3 of the German Corporate Governance Code to cover the eventuality of a takeover offer being made for Bayer AG. Under these agreements, payments promised in the event of early termination of the service contract of a Board of Management member due to a change of control are limited to the value of three years' compensation and may not compensate more than the remaining term of the contract.

4.6 CSR Directive Implementation Act: Index to Nonfinancial Statement

CSR Directive Implementation Act[1]: Index to Nonfinancial Statement

Business model	We present our business model within the meaning of the German Commercial Code (HGB), Section 289c and Section 315c in Chapter A 1.1 Corporate Profile and Structure		**Page** 43-49
Aspects	**Bayer area of activity**	**Concept:** Management approaches, Group targets, measures, results, due diligence processes; nonfinancial key data	
Environmental aspects		**Chapter**	**Page**
	Resource efficiency; environmental protection (emissions into air, water, soil); safety; product stewardship	A 1.2.1 Group Strategy and Targets 1.4.2.2 Production and Logistics A 1.4.3.1 Product Stewardship A 1.4.3.2 Safety: plant and transportation safety A 1.4.3.3 Environmental Protection	50, 53-55 99-100, 101 106-109, 112-114 104-105, 117-119 104-105, 120-128
Supplier management	Supplier management	A 1.2.1 Targets and Key Performance Indicators A 1.4.2.1 Procurement and Supplier Management	54 93, 94-97
Employee-related aspects		**Chapter**	**Page**
	Employee relations and developments; safety; human rights	A 1.2.1 Targets and Key Performance Indicators A 1.4.1.1 Employees A 1.4.1.2 Human Rights A 1.4.3.2 Safety: occupational health and safety	55 79, 81-82, 83-86, 87-88 89 116-117
Supplier management	Supplier management	A 1.2.1 Targets and Key Performance Indicators A 1.4.2.1 Procurement and Supplier Management	54 93, 94-97
Social aspects		**Chapter**	**Page**
	Stakeholder engagement and partnerships; societal engagement; production; safety	A 1.2.1 Targets and Key Performance Indicators A 1.2.3 Sustainability Management – Stakeholder dialogue A 1.4.1.3 Societal Engagement A 1.4.2.2 Production A 1.4.3.2 Safety: plant and transportation safety	55 58-59 90 99-100 104-105, 116, 117-119
Bribery and corruption		**Chapter**	**Page**
Instruments for combating corruption and bribery	Business ethics	A 1.2.1 Targets and Key Performance Indicators A 1.4.1.2 Human Rights A 1.4.2.3 Marketing and Distribution: commitment to ethical conduct A 4.2 Compliance	55 89 103 187-190
Supplier management	Supplier management	A 1.2.1 Targets and Key Performance Indicators A 1.4.2.1 Procurement and Supplier Management	54 93, 94-97
Respect for human rights		**Chapter**	**Page**
	Employee relations and developments (fair working conditions); human rights Supplier management	A 1.2.1 Targets and Key Performance Indicators A 1.4.1.1 Employees A 1.4.1.2 Human Rights A 1.4.2.1 Procurement and Supplier Management, including child labor	54, 55 83, 84-85, 88 89-90 97-98
Material risks	In chapters A 3.2.1 Group-wide Opportunity and Risk Management System, A 3.2.2 Opportunity and Risk Status and B 32. Legal Risks, we report on material risks that arise through our business activity, business relationships, products and services		**Page** 170,172, 176-179, 296-300
Diversity concept	We present our diversity concept for the Board of Management and Supervisory Board in Chapter A 4.1 Declaration by Corporate Management, and for Group employees in general in Chapter A 1.4.1.1 Employees		**Page** 183-186 84

[1] Sections 289b to e HGB, sections 315b and c HGB; additional information on the nonfinancial statement of Bayer AG in accordance with sections 289b to e HGB is given in Chapter A 1.4.4



Consolidated Financial Statements

Bayer Group Consolidated Income Statements

B 1

€ million	Note	2016	2017
Net sales	**[7]**	**34,943**	**35,015**
Cost of goods sold		(11,756)	(11,382)
Gross profit		**23,187**	**23,633**
Selling expenses	[8]	(11,148)	(11,116)
Research and development expenses	[9]	(4,405)	(4,504)
General administration expenses		(1,804)	(2,026)
Other operating income	[10]	787	864
Other operating expenses	[11]	(879)	(948)
EBIT [1]		**5,738**	**5,903**
Equity-method income (loss)	[13.1]	(6)	20
Financial income		149	289
Financial expenses		(1,108)	(1,635)
Financial result	**[13]**	**(965)**	**(1,326)**
Income before income taxes		**4,773**	**4,577**
Income taxes	[14]	(1,017)	(1,329)
Income from continuing operations after income taxes		**3,756**	**3,248**
of which attributable to noncontrolling interest		13	(1)
of which attributable to Bayer AG stockholders		3,743	3,249
Income from discontinued operations after income taxes	**[6.3]**	**1,070**	**4,846**
of which attributable to noncontrolling interest		282	759
of which attributable to Bayer AG stockholders		788	4,087
Income after income taxes		**4,826**	**8,094**
of which attributable to noncontrolling interest	[15]	295	758
of which attributable to Bayer AG stockholders (net income)		**4,531**	**7,336**
€			
Earnings per share	**[16]**		
From continuing operations	**[16]**		
Basic		4.50	3.73
Diluted		4.50	3.73
From discontinued operations	**[16]**		
Basic		0.94	4.68
Diluted		0.94	4.68
From continuing and discontinued operations	**[16]**		
Basic		5.44	8.41
Diluted		5.44	8.41

2016 figures restated

[1] For definition, see Combined Management Report, Chapter 2.4 “Alternative Performance Measures Used by the Bayer Group.”

Bayer Group Consolidated Statements of Comprehensive Income

B 2

€ million	Note	2016	2017
Income after income taxes		**4,826**	**8,094**
of which attributable to noncontrolling interest	[15]	295	758
of which attributable to Bayer AG stockholders		4,531	7,336
Remeasurements of the net defined benefit liability for post-employment benefit plans	[25]	(1,036)	1,236
Income taxes	[14]	228	(515)
Other comprehensive income from remeasurements of the net defined benefit liability for post-employment benefit plans		**(808)**	**721**
Other comprehensive income relating to associates accounted for using the equity method		**–**	**(44)**
Other comprehensive income that will not be reclassified subsequently to profit or loss		**(808)**	**677**
Changes in fair values of derivatives designated as cash flow hedges	[30.3]	58	(144)
Reclassified to profit or loss		3	3
Income taxes	[14]	(16)	53
Other comprehensive income from cash flow hedges		**45**	**(88)**
Changes in fair values of available-for-sale financial assets	[20]	65	(3)
Reclassified to profit or loss		–	(2)
Income taxes	[14]	(8)	3
Other comprehensive income from available-for-sale financial assets		**57**	**(2)**
Changes in exchange differences recognized on translation of operations outside the eurozone		703	(2,152)
Reclassified to profit or loss		(58)	–
Other comprehensive income from exchange differences		**645**	**(2,152)**
Other comprehensive income relating to associates accounted for using the equity method		**(14)**	**101**
Other comprehensive income that may be reclassified subsequently to profit or loss		**733**	**(2,141)**
Total other comprehensive income[1]		**(75)**	**(1,464)**
of which attributable to noncontrolling interest		(10)	(106)
of which attributable to Bayer AG stockholders		(65)	(1,358)
Total comprehensive income		**4,751**	**6,630**
of which attributable to noncontrolling interest		285	652
of which attributable to Bayer AG stockholders		4,466	5,978

[1] Total changes recognized outside profit or loss

Bayer Group Consolidated Statements of Financial Position

B 3

€ million	Note	Dec. 31, 2016	Dec. 31, 2017
Noncurrent assets			
Goodwill	[17]	16,312	14,751
Other intangible assets	[17]	13,567	11,674
Property, plant and equipment	[18]	13,114	7,633
Investments accounted for using the equity method	[19]	584	4,007
Other financial assets	[20]	1,281	1,634
Other receivables	[23]	583	400
Deferred taxes	[14]	6,350	4,915
		51,791	**45,014**
Current assets			
Inventories	[21]	8,408	6,550
Trade accounts receivable	[22]	10,969	8,582
Other financial assets	[20]	6,275	3,529
Other receivables	[23]	2,210	1,276
Claims for income tax refunds		676	474
Cash and cash equivalents		1,899	7,581
Assets held for sale	[6.3]	10	2,081
		30,447	**30,073**
Total assets		**82,238**	**75,087**
Equity	[24]		
Capital stock		2,117	2,117
Capital reserves		9,658	9,658
Other reserves		18,558	25,026
Equity attributable to Bayer AG stockholders		**30,333**	**36,801**
Equity attributable to noncontrolling interest		1,564	60
		31,897	**36,861**
Noncurrent liabilities			
Provisions for pensions and other post-employment benefits	[25]	11,134	8,020
Other provisions	[26]	1,780	1,366
Financial liabilities	[27]	16,180	12,483
Income tax liabilities		423	495
Other liabilities	[29]	957	1,116
Deferred taxes	[14]	1,330	1,153
		31,804	**24,633**
Current liabilities			
Other provisions	[26]	5,421	4,344
Financial liabilities	[27]	3,401	1,935
Trade accounts payable	[28]	6,410	5,129
Income tax liabilities		884	422
Other liabilities	[29]	2,421	1,652
Liabilities directly related to assets held for sale	[6.3]	–	111
		18,537	**13,593**
Total equity and liabilities		**82,238**	**75,087**

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 securities
Dec. 31, 2015	**2,117**	**6,167**	**16,581**	**(622)**	**24**
Equity transactions with owners					
Capital increase		3,491			
Dividend payments			(2,067)		
Other changes			129	53	
Other comprehensive income			(781)	614	57
Income after income taxes			4,531		
Dec. 31, 2016	**2,117**	**9,658**	**18,393**	**45**	**81**
Equity transactions with owners					
Capital increase					
Dividend payments			(2,233)		
Other changes			2,727		
Other comprehensive income			628	(1,915)	17
Income after income taxes			7,336		
Dec. 31, 2017	**2,117**	**9,658**	**26,851**	**(1,870)**	**98**

B 4 (continued)

€ million	Cash flow hedges	Revaluation surplus	Equity attributable to Bayer AG stockholders	Equity attributable to non-controlling interest	Equity
Dec. 31, 2015	**(23)**	**21**	**24,265**	**1,180**	**25,445**
Equity transactions with owners					
Capital increase			3,491		3,491
Dividend payments			(2,067)	(58)	(2,125)
Other changes		(4)	178	157	335
Other comprehensive income	45		(65)	(10)	(75)
Income after income taxes			4,531	295	4,826
Dec. 31, 2016	**22**	**17**	**30,333**	**1,564**	**31,897**
Equity transactions with owners					
Capital increase					
Dividend payments			(2,233)	(131)	(2,364)
Other changes		(4)	2,723	(2,025)	698
Other comprehensive income	(88)		(1,358)	(106)	(1,464)
Income after income taxes			7,336	758	8,094
Dec. 31, 2017	**(66)**	**13**	**36,801**	**60**	**36,861**

Bayer Group Consolidated Statements of Cash Flows

B 5

€ million	Note	2016	2017
Income from continuing operations after income taxes		3,756	3,248
Income taxes		1,017	1,329
Financial result		965	1,326
Income taxes paid		(1,701)	(1,821)
Depreciation, amortization and impairments		3,063	2,660
Change in pension provisions		(297)	(227)
(Gains) losses on retirements of noncurrent assets		(45)	(133)
Decrease (increase) in inventories		(78)	(293)
Decrease (increase) in trade accounts receivable		(385)	(18)
(Decrease) increase in trade accounts payable		310	265
Changes in other working capital, other noncash items		(170)	275
Net cash provided by (used in) operating activities from continuing operations		**6,435**	**6,611**
Net cash provided by (used in) operating activities from discontinued operations		2,654	1,523
Net cash provided by (used in) operating activities	[33]	**9,089**	**8,134**
Cash outflows for additions to property, plant, equipment and intangible assets		(2,578)	(2,366)
Cash inflows from sales of property, plant, equipment and other assets		111	241
Cash inflows from (outflows for) divestments		(18)	453
Cash outflows for noncurrent financial assets		(690)	(313)
Cash inflows from (outflows for) acquisitions less acquired cash		2	(158)
Interest and dividends received		89	168
Cash inflows from (outflows for) current financial assets		(5,645)	1,543
Net cash provided by (used in) investing activities	[34]	**(8,729)**	**(432)**
Capital contributions		3,300	–
Proceeds from shares of Covestro AG		–	3,717
Dividend payments		(2,126)	(2,364)
Issuances of debt		15,190	10,369
Retirements of debt		(15,920)	(12,848)
Interest paid including interest-rate swaps		(853)	(801)
Interest received from interest-rate swaps		59	69
Cash outflows for the purchase of additional interests in subsidiaries		–	(23)
Net cash provided by (used in) financing activities	[35]	**(350)**	**(1,881)**
Change in cash and cash equivalents due to business activities		**10**	**5,821**
Cash and cash equivalents at beginning of year		**1,859**	**1,899**
Change in cash and cash equivalents due to changes in scope of consolidation		3	–
Change in cash and cash equivalents due to exchange rate movements		27	(139)
Cash and cash equivalents at end of year		**1,899**	**7,581**

2016 figures restated

Notes to the Consolidated Financial Statements of the Bayer Group

1. Key data by segment

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Key Data by Segment

	Pharmaceuticals		Consumer Health		Crop Science		Animal Health	
€ million	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Net sales (external)	16,420	16,847	6,037	5,862	9,915	9,577	1,523	1,571
Change [1]	+7.3%	+2.6%	−0.6%	−2.9%	−2.1%	−3.4%	+2.2%	+3.2%
Currency-adjusted change [1]	+8.7%	+4.3%	+3.5%	−1.7%	+0.2%	−2.2%	+4.8%	+4.1%
Intersegment sales	29	38	5	14	36	38	10	8
Net sales (total)	16,449	16,885	6,042	5,876	9,951	9,610	1,533	1,579
EBIT [1]	3,389	4,325	695	518	1,755	1,235	313	307
EBIT before special items [1]	3,947	4,665	987	818	1,898	1,643	320	338
EBITDA before special items [1]	5,251	5,711	1,411	1,231	2,421	2,043	349	381
ROCE [1]	16.2%	21.0%	3.5%	2.7%	12.9%	9.6%	63.5%	47.1%
Net cash provided by operating activities	3,368	3,867	874	1,059	2,071	1,884	193	209
Equity-method income (loss)	–	1	2	1	(1)	(1)	–	–
Equity-method carrying amounts [2]	3	3	11	11	15	35	–	–
Assets [2]	22,173	21,753	16,558	14,896	14,868	13,106	838	935
Capital expenditures [2]	851	1,126	220	181	773	670	39	41
Depreciation, amortization and impairments	1,695	1,251	601	627	525	481	30	45
of which impairment losses	464	217	175	213	52	72	1	9
of which impairment loss reversals	–	–	–	–	–	(1)	(1)	–
Research and development expenses	2,787	2,888	259	240	1,164	1,166	140	155

[1] For definition, see Combined Management Report, Chapter 2.4 “Alternative Performance Measures Used by the Bayer Group.”
[2] 2016 Group total including Covestro

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Key Data by Segment

	All Other Segments		Reconciliation: Corporate Functions and Consolidation		Group	
€ million	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Net sales (external)	1,042	1,142	6	16	34,943	35,015
Change [1]	–5.0%	+9.6%	+50.0%	+166.7%	+2.5%	+0.2%
Currency-adjusted change [1]	–4.2%	+10.5%	–	–	+4.7%	+1.6%
Intersegment sales	1,356	2,324	(1,436)	(2,417)	–	–
Net sales (total)	2,398	3,466	(1,430)	(2,401)	34,943	35,015
EBIT [1]	(50)	4	(364)	(486)	5,738	5,903
EBIT before special items [1]	18	115	(344)	(449)	6,826	7,130
EBITDA before special items [1]	224	358	(338)	(436)	9,318	9,288
ROCE [1]	–	–	–	–	10.3%	10.8%
Net cash provided by operating activities	503	256	(574)	(664)	6,435	6,611
Equity-method income (loss)	–	–	(7)	19	(6)	20
Equity-method carrying amounts [2]	–	–	325	3,958	584	4,007
Assets [2]	2,632	2,206	15,986	22,191	82,238	75,087
Capital expenditures [2]	307	359	18	41	2,627	2,418
Depreciation, amortization and impairments	206	243	6	13	3,063	2,660
of which impairment losses	7	2	–	–	699	513
of which impairment loss reversals	–	–	–	–	(1)	(1)
Research and development expenses	39	3	16	52	4,405	4,504

2016 figures restated

[1] For definition, see Combined Management Report, Chapter 2.4 “Alternative Performance Measures Used by the Bayer Group.”

[2] 2016 Group total including Covestro

2. General information

The consolidated financial statements of the Bayer Group as of December 31, 2017, were prepared by Bayer Aktiengesellschaft (Bayer AG) according to the International Financial Reporting Standards (IFRS) issued by the International Accounting Standards Board (IASB), London, United Kingdom, in effect at the end of the reporting period, and the interpretations of the IFRS Interpretations Committee (IFRS IC) as endorsed by the European Union. The applicable further requirements of Section 315e of the German Commercial Code were also taken into account.

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. Its material business activities in the fields of health care and agriculture took place in the reporting period in the Pharmaceuticals, Consumer Health, Crop Science and Animal Health segments. The activities of each segment are outlined in Note [5].

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 on February 20, 2018. They were discussed by the Audit Committee of the Supervisory Board of Bayer AG at its meeting on February 26, 2018, and approved by the Supervisory Board at its plenary meeting on February 27, 2018.

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 is 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 consolidated financial statements of the Bayer Group are drawn up in euros. Amounts are stated in millions of euros (€ million) except where otherwise indicated.

The financial statements of the individual consolidated companies are prepared as of the closing date of the Group financial statements.

3. Effects of new financial reporting standards

Financial reporting standards applied for the first time in 2017

The first-time application of the following amended financial reporting standards had no impact, or no material impact, on the presentation of Bayer's financial position or results of operations, or on earnings per share.

In January 2016, the IASB published amendments to IAS 7 (Statement of Cash Flows) under the title "Amendments to IAS 7: Disclosure Initiative." The following changes in liabilities arising from financing activities must be disclosed: (a) changes from financing cash flows; (b) changes arising from obtaining or losing control of subsidiaries or other businesses; (c) the effect of changes in foreign exchange rates; (d) changes in fair values; (e) other changes.

In January 2016, the IASB also published amendments to IAS 12 (Income Taxes) under the title “Recognition of Deferred Assets for Unrealised Losses.” These amendments basically clarify that in the case of assets recognized at fair value (e.g. fixed-rate debt instruments) where the taxable value is the cost of acquisition, unrealized losses result in deductible temporary differences, irrespective of the future use of the asset. Further, when estimating future taxable profits for the purpose of recognizing deferred tax assets, the tax deductions resulting from the reversal of other deductible temporary differences must be eliminated.

In December 2016, the IASB published “Annual Improvements to IFRS Standards 2014 - 2016 Cycle” as part of its annual improvements project. The changes relating to IFRS 12 (Disclosure of Interest in Other Entities) primarily pertain to clarifications.

Published financial reporting standards that have not yet been applied

The IASB and the IFRS Interpretations Committee have issued the following standards, amendments to standards, and interpretations whose application was not yet mandatory for the 2017 fiscal year, or for which the European Union had not yet completed the endorsement process. The application of these standards and amendments is conditional upon their endorsement by the European Union.

IFRS 9 (Financial Instruments) is the new standard for accounting for financial instruments that is to be applied for annual reporting periods beginning on or after January 1, 2018. It was endorsed by the European Union in November 2016.

Bayer will apply IFRS 9 retrospectively, accounting for the aggregate amount of any transition effects by way of an adjustment to equity as of January 1, 2018, and presenting the comparative period in line with previous rules. IFRS 9 introduces new provisions for the classification and measurement of financial assets and replaces the current rules on the impairment of financial assets. The new standard requires a change in accounting methods for the effects resulting from a change in the company's own credit risk for financial liabilities classified at fair value and modifies the requirements for hedge accounting. The classification and measurement of financial liabilities is otherwise largely unchanged from the existing regulations.

Under IFRS 9, the classification and measurement of financial assets is determined by the company’s business model and the characteristics of the cash flows of each financial asset. As at the transition date, these changes in the classification of financial assets will not have any material impact on the presentation of the Group’s financial position and results of operations. In the case of equity instruments held as of January 1, 2018, that are not held for trading, Bayer will uniformly opt to recognize future changes in their fair value through other comprehensive income in the statement of comprehensive income and to continue to classify these as equity upon the derecognition of the financial instrument.

Furthermore, IFRS 9 will lead to an increase in the loss allowance for expected credit losses on financial assets, including trade accounts receivable. Loss allowances for expected credit losses on trade accounts receivable will increase by an amount in the region of approximately €95 million. As at the transition date, the measurement effects for other financial assets will be immaterial.

In the future, changes in the fair values of financial liabilities measured at fair value through profit or loss resulting from Bayer's own credit risk will be recognized through other comprehensive income in the statement of comprehensive income rather than in the income statement. At Bayer, this change principally affects the debt instruments (exchangeable bond) issued in June 2017, which also can be exchanged into Covestro shares. As at the transition date, this change will not have any material effects on these items.

For hedge accounting, Bayer is opting to prospectively apply IFRS 9 from January 1, 2018. If only the intrinsic value of an option is designated as a hedging instrument in a hedging relationship, IFRS 9 requires that changes in the fair value of the time value of the options during the hedging period initially be recognized as other comprehensive income in the statement of comprehensive income. Subsequent measurement depends on the type of hedged transaction. In contrast to the other rules on hedge accounting, the revised accounting method is to be applied retrospectively. As at the transition date, these changes will not have any material impact on the presentation of the Group's financial position and results of operations.

The IASB issued IFRS 15 (Revenues from Contracts with Customers) in May 2014 and provided clarifications to the standard in April 2016. Both the standard and the clarifications have been endorsed by the European Union. IFRS 15 replaces the current IAS 18 (Revenue) and IAS 11 (Construction Contracts) revenue recognition standards and the related interpretations, and is applicable for annual reporting periods beginning on or after January 1, 2018. The new standard establishes a five-step model related to revenue recognition from contracts with customers. Under IFRS 15, revenue is recognized at amounts that reflect the consideration that an entity expects to be entitled to in exchange for transferring goods or services to a customer. Revenue is recognized when (or as) the entity transfers control of goods or services to a customer either over time or at a point in time. In addition, IFRS 15 clarifies the allocation of individual topics to (new) line items in the statement of financial position and to functional cost items in the income statement, and whether gross or net amounts are to be presented.

Bayer will implement IFRS 15 on the basis of the modified retrospective method, accounting for the aggregate amount of any transition effects by way of an adjustment to retained earnings as of January 1, 2018, and presenting the comparative period in line with previous rules. All of the established business models for the Bayer Group were examined in the course of the implementation project. The previous assessment that the new standard is not expected to materially affect the timing of revenue recognition for the transactions concerned or their components was confirmed. With regard to total Group sales, there are indications of immaterial transition effects specifically due to the different accounting for milestone payments in connection with right-to-access licenses and the recognition of revenues from trademark rights divested in the past. This is likely to result in an immaterial increase in retained earnings on the transition date as explained in greater detail below:

- IFRS 15 requires catch-up adjustments to revenue when milestone payments for right-to-access licenses become unconstrained leading to earlier revenue recognition. This change is expected to result in an increase in retained earnings and a decrease in contract liabilities (currently presented as deferred income in other liabilities) by roughly €100 million on January 1, 2018. This would translate into a decrease of less than 0.1% in annual net sales and less than 0.3% in annual EBIT through 2027 in the Pharmaceuticals segment as measured in relation to the segment's current figures. These effects are presented before deferred taxes.
- IFRS 15 in conjunction with IAS 38 (Intangible Assets) generally requires the recognition of the purchase price related to a brand divestment net of associated carrying amounts in other operating income or expenses upon control transfer. Some cases have been identified where the purchase price was deferred under former policy in line with IAS 18, but would have been recognized in income earlier under IFRS 15, leading to an expected increase in retained earnings and an expected decrease in contract liabilities (currently presented as deferred income in other liabilities) by roughly €30 million on the date of transition. This would translate into a decrease of less than 1.2% and 0.2% in annual net sales and less than 6.2% and 1% in annual EBIT in 2018 and 2019, respectively, for the Animal Health segment as measured in relation to the segment's current figures. For the Pharmaceuticals segment, this would lead to a decrease of less than 0.04% in annual net sales and less than 0.2% in annual EBIT in 2018 as measured in relation to the segment's current figures. These effects are presented before deferred taxes.

At the time these consolidated financial statements were finalized, Bayer had not fully concluded its analysis of the impact IFRS 15 will have on the sale of goods for which it also organizes transportation services. However, preliminary analyses have not revealed any material effects. Line items added to the statement of financial position through IFRS 15, and the corresponding allocation rules, will give rise to presentational changes within the statement of financial position. Overall, based on current knowledge, we do not anticipate any material effects on the results of operations or on earnings per share.

In January 2016, the IASB issued IFRS 16 (Leases), the new standard for lease accounting, which will replace IAS 17. IFRS 16 introduces a uniform lease accounting model for lessees, requiring recognition of a right-of-use asset and a liability for all leases with a term of more than 12 months unless such leases are immaterial. It will eliminate the current requirement for lessees to classify lease contracts as either operating leases – without recognizing the respective assets or liabilities – or as finance leases. As in the previous standard, IAS 17, lessors still have to differentiate between finance and operating leases. Companies in the Bayer Group mainly act as lessees. The application of IFRS 16 is expected to impact Bayer's financial position and results of operations as follows: Instead of the minimum lease payments arising from operating leases currently recognized under other financial commitments, application of IFRS 16 will increase noncurrent assets by requiring the recognition of rights of use. Similarly, financial liabilities will be increased by recognition of the corresponding lease liabilities. In the statement of comprehensive income, the amortization of rights of use and the interest expense for the liabilities will be recognized in place of the expenses for operating leases. In the statement of cash flows, IFRS 16 will probably result in an improvement in the operating cash flow by reducing cash flows for operating activities, while the repayment component of lease payments and the interest expense will be recognized in the financing cash flow. The new standard is to be applied for annual periods beginning on or after January 1, 2019. It was endorsed by the European Union in October 2017. A Group-wide project is steering the implementation of this new standard. Bayer is currently evaluating the quantitative impacts the amendments will have on the presentation of its financial position and results of operations. In this connection, we refer to the other financial commitments from operating leases reported in Note [31].

In June 2016, the IASB published an amendment to IFRS 2 (Share-based Payment) under the title "Classification and Measurement of Share-based Payment Transactions." This amendment provides guidance on certain accounting issues relating to cash-settled share-based payments. For example, the fair value of the equity instruments is not to be adjusted for service conditions or non-market-based performance conditions. Instead, these are to be taken into account by adjusting the number of equity instruments expected to vest. The amendment is to be applied for annual periods beginning on or after January 1, 2018. It has not yet been endorsed by the European Union. The changes are not expected to have a material impact on the presentation of Bayer's financial position or results of operations.

In September 2016 the IASB published an amendment to IFRS 4 (Insurance Contracts) under the title "Applying IFRS 9 'Financial Instruments' with IFRS 4 'Insurance Contracts'." These amendments aim to mitigate the impact of the different dates of first-time application of IFRS 9 and IFRS 17, the successor to IFRS 4, especially at companies with extensive insurance business. It introduces two optional approaches which insurers can use provided that certain conditions are fulfilled: the overlay approach and temporary exemption. The amendment is to be applied for annual periods beginning on or after January 1, 2018. It was endorsed by the European Union in November 2017. The changes are not expected to have a material impact on the presentation of Bayer's financial position or results of operations.

In December 2016, the IASB published an amendment to IAS 40 (Investment Property) under the title "Transfers of Investment Property." This specifies that a property may only be transferred to or from the investment property classification when there has been an actual change in use and not when there is a mere change of intent concerning the property. The amendment is to be applied for annual periods beginning on or after January 1, 2018. It has not yet been endorsed by the European Union. The changes are not expected to have a material impact on the presentation of Bayer's financial position or results of operations.

In December 2016, the IASB published "Annual Improvements to IFRS Standards 2014-2016 Cycle" as part of its annual improvements project. The amendments relate to IFRS 1 (First Time Adoption of IFRS), IFRS 12 (Disclosure of Interest in Other Entities) and IAS 28 (Investments in Associates and Joint Ventures). They mainly contain clarifications on the scope of application and other matters. The amendments to IFRS 1 and IAS 28 are to be applied for annual periods beginning on or after January 1, 2018. The amendments were endorsed by the European Union in February 2018. The changes are not expected to have a material impact on the presentation of Bayer's financial position or results of operations.

In December 2016, the IASB published the IFRIC Interpretation 22 (Foreign Currency Transactions and Advance Consideration) relating to IAS 21 (The Effects of Changes in Foreign Exchange Rates). The Interpretation clarifies that the assets, income and expenses accounted for following a foreign currency transaction are to be translated at the same exchange rate as any related receipts or payments of advance consideration. IFRIC 22 is to be applied for annual periods beginning on or after January 1, 2018. It has not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In May 2017, the IASB published IFRS 17 (Insurance Contracts), which will replace IFRS 4. Its scope comprises insurance contracts, reinsurance contracts and investment contracts with discretionary participation features. IFRS 17 is to be applied for annual periods beginning on or after January 1, 2021. The amendments have not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In June 2017, the IASB published IFRIC Interpretation 23 (Uncertainty over Income Tax Treatments) to clarify uncertainty relating to the accounting treatment of income taxes. IFRIC 23 is to be applied for annual periods beginning on or after January 1, 2019. It has not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In October 2017, the IASB published an amendment to IFRS 9 (Financial Instruments) under the title "Prepayment Features with Negative Compensation." This addresses the treatment of symmetrical rights to terminate a contract to allow measurement of financial assets at amortized cost or at fair value through comprehensive income. In addition, it contains clarification on the modification of financial liabilities that does not result in derecognition. The amendment to IFRS 9 is to be applied for annual periods beginning on or after January 1, 2019. It has not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In October 2017, the IASB published an amendment to IAS 28 (Investments in Associates and Joint Ventures) under the title "Long-term Interests in Associates and Joint Ventures." This clarifies that a company is required to apply IFRS 9 (Financial Instruments), including its impairment rules, to long-term interests in associates and joint ventures that, in substance, form part of the net investment in the associate or joint venture and to which the equity method is not applied. The application of IFRS 9 thus takes precedence over IAS 28. The amendment to IAS 28 is to be applied for annual periods beginning on or after January 1, 2019. It has not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In December 2017, the IASB published "Annual Improvements to IFRS Standards 2015-2017 Cycle" as part of its annual improvements project. The amendments relate to IFRS 3 (Business Combinations), IFRS 11 (Joint Arrangements), IAS 12 (Income Taxes) and IAS 23 (Borrowing Costs). They principally comprise clarifications. The amendments are to be applied for annual periods beginning on or after January 1, 2019. Earlier application is permitted. The amendments have not yet been endorsed by the European Union. Bayer is currently evaluating the impact the amendments will have on the presentation of its financial position and results of operations.

In February 2018, the IASB published amendments to IAS 19 (Employee Benefits). These amendments relate to how a company accounts for a defined benefit plan when a change – an amendment, curtailment or settlement – takes place, and require a company to remeasure its net defined benefit liability or asset when said change occurs. They also require a company to use the updated acturial assumptions from this remeasurement to determine current service cost and net interest for the remainder of the reporting period after the change to the plan. The amendments also include clarifications regarding the related effects on determining the asset ceiling. The amendments are to be applied for annual reporting periods beginning on or after January 1, 2019. Early application is permissable. They have not yet been endorsed by the European Union. Bayer will evaluate the impact the amendments will have on the presentation of its financial position and results of operations.

4. Basic principles, methods and critical accounting estimates

The financial statements of the consolidated companies are prepared according to uniform accounting policies and measurement principles.

The consolidated financial statements of the Group 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 for example, financial assets held for trading or available for sale, derivatives, and liabilities for which Bayer has made use of the fair value option.

In preparing the consolidated financial statements, the 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, sales allowances, product liability and guarantees. 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.

Changes in accounting policies or measurement principles in light of new or revised standards are generally applied in line with the options permitted within the respective standard. Depending on the option that Bayer makes use of, the income statement for the previous year and the opening statement of financial position for that year are adjusted where necessary. For detailed information on standards to be applied for the first time from January 1, 2018, please see Note [3].

Consolidation

The consolidated financial statements include subsidiaries, joint operations, joint ventures and associates.

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.

Joint operations and joint ventures are based on joint arrangements. A joint arrangement is deemed to exist if the Bayer Group through a contractual agreement jointly controls activities managed with a third party. Joint control is only deemed to exist if decisions regarding the relevant activities require the unanimous consent of the parties sharing control.

A joint operation is a joint arrangement whereby the parties that have joint control of the arrangement have rights to the assets, and obligations for the liabilities, relating to the arrangement. The Bayer Group recognizes the share of assets, liabilities, revenues and expenses relating to its interest in a joint operation in accordance with its rights and obligations.

A joint venture is a joint arrangement whereby the parties that have joint control of the arrangement 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. In addition, Bayer AG can generally exert significant influence on companies in which it holds an interest of below 20% when it has representation in that company's supervisory body.

The carrying amount of a company accounted for using the equity method is adjusted annually by the percentage of any 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' equities, impairment losses recognized on goodwill, and gains and losses from the sale of investments accounted for using the equity method, are reflected in equity-method income / loss.

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 accounted for at cost of acquisition less any impairment losses.

Foreign currency translation

The financial statements of the individual companies for inclusion in the consolidated financial statements are prepared in their respective functional currencies. A company's functional currency is that of the economic environment in which it primarily generates and expends cash. The majority of consolidated companies carry out their activities autonomously from a financial, economic and organizational point of view, and their functional currencies are therefore the respective local currencies.

In the consolidated financial statements, the assets and liabilities of companies that do not use the euro as their functional currency at the start and end of the year 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. Equity components are translated at the historical exchange rates prevailing at the respective dates of their first-time recognition in Group equity.

The exchange differences arising between the resulting amounts and those obtained by translating at closing rates are recognized outside profit or loss as "Exchange differences on translation of operations outside the eurozone" (in other comprehensive income) or presented as "Exchange differences" in the tables in the Notes. When a company is deconsolidated or the net investment in a foreign operation is reduced, such exchange differences are reclassified from equity to profit or loss.

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

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Exchange Rates for Major Currencies

		Closing rate		Average rate	
€1/		**2016**	**2017**	**2016**	**2017**
BRL	Brazil	3.43	3.98	3.84	3.59
CAD	Canada	1.42	1.51	1.47	1.46
CHF	Switzerland	1.07	1.17	1.09	1.11
CNY	China	7.35	7.81	7.36	7.61
GBP	United Kingdom	0.86	0.89	0.82	0.88
JPY	Japan	123.36	135.01	120.06	126.39
MXN	Mexico	21.78	23.66	20.62	21.28
RUB	Russia	64.30	69.41	73.79	65.71
USD	United States	1.05	1.20	1.11	1.13

In 2017, as in prior years, the rules of IAS 29 (Financial Reporting in Hyperinflationary Economies) were relevant for Bayer S.A., Venezuela. Gains and losses incurred upon adjusting the carrying amounts of nonmonetary assets and liabilities and of items in the income statement for inflation are recognized in other operating income and expenses.

Starting in January 2016, foreign currency translation and valuation were switched to the "hyperinflation-adjusted" SIMADI exchange rate. This is determined internally because reliable exchange rates are not available externally. It was initially based on the official SIMADI rate and has subsequently been adjusted in line with published inflation rates. The exchange rate thus calculated was VEF 74,258 to the U.S. dollar at the end of December 2017 (2016: VEF 2,737 to the U.S. dollar). The resulting U.S. dollar amounts were then translated at the dollar / euro closing-date rate.

Receivables from the Venezuelan exchange control authority relating to the allocation of U.S. dollars at a preferential exchange rate are impaired to zero as soon as they are posted.

Foreign currency measurement

In the separate financial statements of the individual consolidated companies, monetary items, such as receivables and liabilities, that are denominated in currencies other than the respective functional currency are measured at closing rates. Related exchange differences are recognized in profit or loss as exchange gains or losses under other financial income or expenses.

Net sales and other operating income

All revenues derived from the selling of products or rendering of services or from licensing agreements are recognized as sales. Other operational revenues are recognized as other operating income. Sales are recognized in profit or loss when the significant risks and rewards of ownership of the goods have been transferred to the customer, the company retains neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the goods sold, the amount of revenue and costs incurred or to be incurred can be measured reliably, and it is sufficiently probable that the economic benefits associated with the transaction will flow to the company.

Sales are stated net of sales taxes, other taxes and sales deductions at the fair value of the consideration received or to be received. Sales deductions are estimated amounts for rebates, cash discounts and product returns. They are deducted at the time the sales are recognized, and appropriate provisions are recorded. Sales deductions are estimated primarily on the basis of historical experience, specific contractual terms and future expectations of sales development. It is unlikely that factors other than these could materially affect sales deductions in the Bayer Group.

Provisions for rebates in 2017 amounted to 6.1% of total net sales (2016: 5.5%). In addition to rebates, Group companies offer cash discounts for prompt payment in some countries. Provisions for cash discounts as of December 31, 2017, and December 31, 2016, were less than 0.1% of total net sales for the respective year.

Sales are reduced by the amount of the provisions for expected returns of defective goods or of saleable products that may be returned under contractual arrangements. The net sales are reduced on the date of sale or on the date when the amount of future product returns can be reasonably estimated. Provisions for product returns in 2017 amounted to 0.6% of total net sales (2016: 0.6%). If future product returns cannot be reasonably estimated and are significant to a sales transaction, the revenues and the related cost of sales are deferred until a reasonable estimate can be made or the right to return the goods has expired.

Some of the Bayer Group's revenues are generated on the basis of licensing agreements under which third parties have been granted rights to products and technologies. Payments received, or expected to be received, that relate to the sale or out-licensing of technologies or technological expertise are recognized in profit or loss as of the effective date of the respective agreement if all rights relating to the technologies and all obligations resulting from them have been relinquished under the contract terms. However, if rights to the technologies continue to exist or obligations resulting from them have yet to be fulfilled, the payments received are deferred accordingly. Upfront payments and similar nonrefundable payments received under these agreements are recorded as other liabilities and recognized in profit or loss according to the degree of performance over the estimated performance period stipulated in the agreement.

License agreements and research and development collaboration agreements may be multiple-deliverable arrangements with varying consideration terms, such as upfront, milestone or similar payments. Such agreements therefore have to be assessed to determine whether the revenues allocated to individual deliverables must be recognized at different points in time and therefore form separate units of account.

To qualify as a separate unit of account for revenue recognition purposes, a deliverable must have value to the licensee on a standalone basis. If this is not the case, the agreement as a whole or a combination of individual deliverables that has value on a standalone basis forms a unit of account.

If necessary goods have yet to be delivered or necessary services provided for a unit of account and such delivery or provision is probable, nonrefundable (royalty) payments already received are recognized through profit or loss over the periods in which these goods are delivered or these services are provided.

Income may also arise from the exchange of intangible assets. The amount recognized is generally based on the fair value of the asset received plus (less) any cash received (dispersed).

Research and development expenses

For accounting purposes, research expenses are defined as costs incurred for current or planned investigations undertaken with the prospect of gaining new scientific or technical knowledge and understanding. Development expenses are defined as costs incurred for the application of research findings or specialist knowledge to plans or designs for the production, provision or development of new or substantially improved products, services or processes, respectively, prior to the commencement of commercial production or use.

Research and development expenses are incurred in the Bayer Group for in-house research and development activities as well as numerous research and development collaborations and alliances with third parties.

Research and development expenses mainly comprise the costs for active ingredient discovery, clinical studies, research and development activities in the areas of application technology and engineering, field trials, regulatory approvals and approval extensions.

Research costs cannot be capitalized. The conditions for capitalization of development costs are closely defined: a key precondition for recognition of an intangible asset is that it is sufficiently certain that the development activity will generate future cash flows that will cover the associated development costs. 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 are not normally satisfied.

In the case of research and development collaborations, a distinction is generally made between payments on contract signature, upfront payments, milestone payments and cost reimbursements for work performed. If an intangible asset (such as the right to the use of an active ingredient) is acquired in connection with any of these payment obligations, the respective payment is capitalized even if it is uncertain whether further development work will ultimately lead to the production of a saleable product. Reimbursements of the cost of research or development work are recognized in profit or loss, except where they are required to be capitalized.

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. The Group establishes provisions for taxes, based on reasonable estimates, for liabilities to the tax authorities of the respective countries that are uncertain as to their amount and the probability of their occurrence. The amount of such provisions is 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 sufficiently probable that taxable income 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 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. It is measured at its cost of acquisition, which is the excess of the acquisition price for shares in a company over the acquired net assets. The net assets are the balance of the fair values of the acquired identifiable assets and the assumed liabilities and contingent liabilities.

Goodwill is not amortized, but tested annually for impairment. Details of the annual impairment tests are given under “Procedure used in global impairment testing and its impact.” Once an impairment loss has been recognized on goodwill, it is not reversed in subsequent periods.

Other intangible assets

An “other intangible asset” is an identifiable nonmonetary asset without physical substance, other than goodwill (such as a patent, a trademark or a marketing right). It is capitalized if the future economic benefits attributable to the asset will probably flow to the company and the cost of acquisition or generation of the asset can be reliably measured.

Other intangible assets are recognized at the cost of acquisition or generation. Those with a determinable useful life are amortized accordingly on a straight-line basis over a period of up to 30 years, except where their actual depletion demands a different amortization pattern. Determination of the expected useful lives of such assets and the amortization patterns is based on estimates of the period for which they will generate cash flows. An impairment test is performed if there is an indication of possible impairment.

Other intangible assets with an indefinite life (such as the Bayer Cross trademark) and intangible assets not yet available for use (such as research and development projects) are not amortized, but tested annually for impairment.

Property, plant and equipment

Property, plant and equipment is depreciated by the straight-line method over an asset's useful life, except where depreciation based on actual depletion is more appropriate.

The following depreciation periods are applied throughout the Group:

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Useful Life of Property, Plant and Equipment	
Buildings	20 to 50 years
Outdoor infrastructure	10 to 20 years
Storage tanks and pipelines	10 to 20 years
Plant installations	6 to 20 years
Machinery and equipment	6 to 12 years
Furniture and fixtures	4 to 10 years
Vehicles	5 to 8 years
Computer equipment	3 to 5 years
Laboratory and research facilities	3 to 5 years

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.

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 the investment property reported in the Notes is determined using the discounted cash flow method, comparisons with the current market values of similar properties, or reports from external experts.

Financial assets

Financial assets comprise loans and receivables, acquired equity and debt instruments, cash and cash equivalents, and derivatives with positive fair values.

Regular-way purchases and sales of financial assets are generally posted on the settlement date. Financial assets are initially recognized at fair value plus transaction costs. The transaction costs incurred for the purchase of financial assets held at fair value through profit or loss are expensed immediately.

If there are substantial and objective indications of a decline in the value of loans and receivables, held-to-maturity financial assets or available-for-sale financial assets, an impairment test is performed. Indications of possible impairment include a high probability of insolvency, a significant deterioration in credit standing, a material breach of contract, operating losses reported by a company over several years, a reduction in market value, the financial restructuring of the debtor, or the disappearance of an active market for the asset.

Impairment losses are generally recorded on receivables in the event of insolvency or similar proceedings being launched, financial restructuring at business partners, or the initiation of enforcement measures. Payment history and past-due receivables are also analyzed, with customer-specific facts assessed in each case.

Financial assets are derecognized when contractual rights to receive cash flows from the financial assets expire or the financial assets are transferred together with all material risks and benefits.

Inventories

In accordance with IAS 2 (Inventories), inventories encompass assets consumed in production or in the rendering of services (raw materials and supplies), assets in the production process for sale (work in process), goods held for sale in the ordinary course of business (finished goods and goods purchased for resale), and advance payments on 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. The net realizable value is the estimated selling price in the ordinary course of business less estimated cost to complete and selling expenses.

Cash and cash equivalents

Cash and cash equivalents comprise cash, checks received and balances with banks and companies. Cash equivalents are highly liquid short-term financial investments that are subject to an insignificant risk of changes in value, are easily convertible into a known amount of cash and have a maturity of three months or less from the date of acquisition or investment.

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 expenses for the year in which they are due and as such are included in the functional cost items, and thus in EBIT. All other post-employment benefit systems are defined benefit plans, which may be either unfunded, i.e. financed by provisions, or funded, i.e. financed through pension funds.

The present value of provisions for defined benefit plans and the resulting expense are calculated in accordance with IAS 19 (Employee Benefits) by the projected unit credit method. The future benefit obligations are valued by actuarial methods and spread over the entire employment period on the basis of specific assumptions regarding beneficiary structure and the economic environment. These relate mainly to the discount rate, future salary and pension increases, variations in health care costs, and mortality rates.

The discount rates used are calculated from the yields of high-quality corporate bond portfolios in specific currencies with cash flows approximately equivalent to the expected disbursements from the pension plans. The uniform discount rate derived from this interest-rate structure is thus based on the yields, at the closing date, of a portfolio of AA-rated corporate bonds whose weighted residual maturities approximately correspond to the duration necessary to cover the entire benefit obligation.

The fair value of plan assets is deducted from the present value of the defined benefit obligation for pensions and other post-employment benefits to determine the net defined benefit liability. The obligations and plan assets are valued at regular intervals of not more than three years. Comprehensive actuarial valuations for all major plans are performed annually as of December 31. Plan assets in excess of the benefit obligation are reflected in other receivables, subject to the asset ceiling specified in IAS 19 (Employee Benefits).

The balance of all income and expenses relating to defined benefit plans, except the net interest on the net liability, is recognized in EBIT. The net interest 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 respective amounts included in net interest. Deferred taxes relating to the effects of remeasurements are also recognized in other comprehensive income.

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.

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.

To enhance the information content of the estimates, certain provisions that could have a material effect on the financial position or results of operations of the Group are tested for their sensitivity to changes in the underlying parameters. To reflect uncertainty about the likelihood of the assumed events actually occurring, the impact of a five-percentage-point change in the probability of occurrence is examined in each case. This analysis has not shown other provisions to be materially sensitive.

Provisions for environmental protection are recorded if future cash outflows are likely to be necessary to ensure compliance with environmental regulations or to carry out remediation work, such costs can be reliably estimated and no future benefits are expected from such measures. Provisions for environmental protection mainly relate to the rehabilitation of contaminated land, recultivation of landfills, and redevelopment and water protection measures.

Estimating the future costs of environmental protection and remediation involves many uncertainties, particularly with regard to the status of laws, regulations and the information available about conditions in the various countries and at the individual sites. Significant factors in estimating the costs include previous experiences in similar cases, conclusions drawn from expert opinions obtained regarding the Group's environmental programs, current costs and new developments affecting costs, management's interpretation of current environmental laws and regulations, the number and 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 experience gained to date regarding environmental matters of a similar nature, provisions are believed to be adequate based upon currently available information. Given the difficulties inherent in estimating environmental liabilities in the businesses in which the Group operates, especially those for which the risk of environmental damage is greater in relative terms (Crop Science), it remains possible that material additional costs will be incurred beyond the amounts accrued. It may transpire during remediation work that additional expenditures are necessary over an extended period and that these exceed existing provisions and cannot be reasonably estimated.

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 can no longer be used.

Restructuring measures may include the sale or termination of business units, site closures, relocations of business activities or fundamental reorganizations of business units.

Trade-related provisions are recorded mainly for the granting of rebates or discounts, product returns, obligations in respect of services already received but not yet invoiced, and impending losses or onerous contracts.

As a global enterprise with a diverse business portfolio, the Bayer Group is exposed to numerous legal risks for which **provisions for litigations** must be established under certain conditions – particularly in the areas of product liability, competition and antitrust law, patent disputes, tax law and environmental protection.

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 outcomes of currently pending and future proceedings generally cannot 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 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 frequently 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 [32]. 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.

Provisions for personnel commitments mainly include those for variable one-time payments under short-term incentive programs and for stock-based compensation. Also reflected here are commitments for service awards, early retirements and pre-retirement part-time working arrangements. Provisions for severance payments resulting from restructuring are reflected in provisions for restructuring.

Miscellaneous provisions include those for other liabilities, contingent liabilities from business combinations, and asset retirement obligations (other than those included in provisions for environmental protection).

Financial liabilities

Financial liabilities comprise financial liabilities, trade accounts payable and other liabilities that are settled in cash and cash equivalents or other financial instruments, as well as negative fair values of derivatives.

Financial liabilities are measured at amortized cost unless they are carried at fair value. Examples include derivatives with negative fair values or liabilities for which the fair value option has been used.

Liabilities for contingent consideration arising from business combinations are measured at fair value. Changes in fair value are recognized through profit or loss as of the respective closing date.

Financial liabilities are derecognized when the contractual obligation is discharged or canceled, or has expired.

Mandatory convertible notes are assessed to determine whether they should be accounted for entirely as debt or split into an equity component and a debt component. This involves examining whether Bayer's early conversion rights have economic substance. These rights may have economic substance with respect to maintaining the current credit rating if early conversion can prevent a rating downgrade. In this event, future savings of credit interest would more than offset the cost of early conversion by Bayer. If the right to early conversion is deemed to have economic substance, components of the mandatory convertible notes are classified as equity.

The mandatory convertible notes issued are accounted for as a hybrid financial instrument. The directly attributable costs along with the debt component, which corresponds to the present value of the future interest payments, are deducted from the proceeds of the issue. The debt component is included in financial liabilities. The remaining amount is the equity component, which is reflected in capital reserves.

The fair value option under IAS 39.11A may be used if a bond represents a hybrid financial instrument, i.e. if the nonderivative host contract constitutes a debt instrument, multiple derivatives are embedded in the bond and at least one of the derivatives has to be separated from the host contract and significantly modifies the contractual cash flows.Such a bond is designated in its entirety as a financial liability at fair value through profit or loss. Changes in its fair value are recognized in other financial income and expenses. Use was made of this fair value option for the first time for the debt instruments issued in June 2017 (exchangeable bond 2017/2020), which are exchangeable into Covestro shares.

Other receivables and liabilities

Accrued items and other nonfinancial assets and liabilities are carried at amortized cost. They are amortized to income by the straight-line method or according to performance of the underlying transaction.

Grants and subsidies from third parties that serve to promote investment are reflected in the statement of financial position under other liabilities and amortized to income over the useful lives of the respective investments or in line with the terms of the grant or subsidy.

Derivatives

The Bayer Group uses derivatives to mitigate the risk of changes in exchange rates, interest rates or prices and to hedge stock-based compensation programs. The instruments used include forward exchange contracts, interest-rate swaps and stock options. Derivatives are recognized at the trade date.

Contracts concluded in order to receive or deliver nonfinancial items for the company's own purposes are not accounted for as derivatives but treated as pending transactions. Where embedded derivatives are identified that are required to be separated from the pending transactions, they are accounted for separately. To take advantage of market opportunities or cover possible peak demand, a nonmaterial volume of transactions may be entered into for which the possibility of immediate resale cannot be excluded. Such transactions are allocated to separate portfolios upon acquisition and accounted for as derivatives according to IAS 39.

Derivatives are carried at fair value. Positive fair values at the end of the reporting period are reflected in financial assets, negative fair values in financial liabilities. Changes in the fair values of these derivatives are recognized directly in profit or loss except where hedge accounting is used.

Changes in the fair values of the effective portion of derivatives designated as cash flow hedges are initially recognized outside profit or loss in accumulated other comprehensive income. They are reclassified to profit or loss when the underlying transaction is realized. If such a derivative is sold or ceases to qualify for hedge accounting, the change in its value continues to be recognized in accumulated other comprehensive income until the forecasted transaction is realized. If the forecasted transaction is no longer expected to occur, the amount previously recognized in accumulated other comprehensive income is reclassified to profit or loss. The ineffective portion of gains or losses on derivatives designated as cash flow hedges is recognized either in other operating income or expenses or in the financial result, depending on the type of underlying transaction.

Changes in the fair values of derivatives designated as fair-value hedges and the adjustments in the carrying amounts of the underlying transactions are recognized in profit or loss.

Changes in the fair values of forward exchange contracts and currency options serving as hedges of items in the statement of financial position are reflected in other financial income and expenses as exchange gains or losses, while changes in the values of interest-rate swaps and interest-rate options are recognized in interest income or expense. Changes in the fair values of commodity futures and options, and of forward exchange contracts used to hedge forecasted sales transactions in foreign currencies, are recognized in other operating income or expenses. Changes in the fair values of stock options or forward stock transactions used to hedge stock-based employee compensation are initially recognized outside profit or loss and subsequently reclassified to profit or loss in the functional costs over the periods of the Aspire programs.

The income and expense reflected in the financial result pertaining to the derivatives and the underlying transactions are shown separately. Income and expense are not offset.

Acquisition accounting

Acquired businesses are accounted for using the acquisition method, which requires that the assets acquired and liabilities assumed be recorded at their respective fair values on the date Bayer obtains control. 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 and brands is based on assumptions concerning, for example:

- The outcomes of research and development activities regarding the efficacy of a crop protection or seed product, compound, 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.)

For significant acquisitions, the purchase price allocation is carried out with assistance from independent third-party valuation specialists. The valuations are based on the information available at the acquisition date.

In step acquisitions, the fair values of the acquired entity's assets and liabilities are measured in accordance with IFRS 3 (Business Combinations) at the date on which control is obtained. Any resulting adjustments to the fair value of the existing interest are recognized in profit or loss. The carrying amount of the assets and liabilities already recognized in the statement of financial position is then adjusted accordingly.

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 stockholders.

After the loss of control, the interest remaining at the time of the loss of control is carried at fair value. If Bayer AG still retains significant influence after divesting shares, the remaining interest is recognized as an interest in an associate and is accounted for using the equity method. If Bayer can no longer exert significant influence on the company, the remaining interest is immediately classified as an available-for-sale financial asset and recognized at fair value outside profit or loss.

Procedure used in global impairment testing and its impact

Impairment tests are performed not only on individual items of intangible assets, property, plant and equipment, but also at the level of cash-generating units or groups of cash-generating units. A cash-generating unit is the smallest identifiable group of assets that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. The Bayer Group regards its strategic business entities or groups of strategic business entities, as well as certain product families, as cash-generating units and subjects them to global impairment testing. The strategic business entities constitute the second financial reporting level below the segments.

Cash-generating units and unit groups are globally tested if there is an indication of possible impairment. Those to which goodwill is allocated are tested at least annually.

Impairment testing involves comparing the carrying amount of each cash-generating unit, unit group or item of intangible assets, property, plant or 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 part of the impairment loss is then allocated among the other noncurrent nonfinancial assets of the cash-generating unit or unit group in proportion to their carrying amounts. The resulting expense is reflected in the functional item of the income statement in which the depreciation or amortization of the respective assets is recognized. The same applies to income from impairment loss reversals.

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 normally being three to five 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, the cash-generating unit or unit group is measured from the viewpoint of an independent market participant. Where the recoverable amount is the value in use, the cash-generating unit, unit group or individual asset 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 the respective individual growth rates derived from market information. 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 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.

The growth rates applied for impairment testing in 2017 and 2016 and the capital cost factors used to discount the expected cash flows are shown in the following table:

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Impairment Testing Parameters

	Growth rate		After-tax cost of capital	
%	2016	2017	2016	2017
Pharmaceuticals	0.0	0.0	5.5	5.6
Consumer Health	0.0	1.0	5.2	4.8
Crop Protection	2.1	2.0	5.3	5.4
Seeds	1.7	2.0	5.3	5.4
Environmental Science	2.4	2.0	5.3	5.4
Animal Health	0.0	1.0	5.3	5.0

No impairment losses were recognized on goodwill on the basis of the global annual impairment testing of the cash-generating units and unit groups in 2017 or 2016. Impairment losses on intangible assets, property, plant and equipment – net of €13 million (2016: €1 million) in impairment loss reversals – totaled €506 million (2016: €711 million). Details are provided in Notes [17] and [18].

Although the estimates of the useful lives of certain assets, assumptions concerning the macroeconomic environment and developments in the industries in which the Bayer Group operates, and estimates of the discounted future cash flows are believed to be appropriate, changes in assumptions or circumstances could require changes in the analysis. This could lead to the recognition of additional impairment losses in the future or – except in the case of goodwill – to reversals of previously recognized impairment losses if developments are contrary to expectations.

The sensitivity analysis for cash-generating units and unit groups to which goodwill is allocated 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. Bayer concluded that no impairment loss would need to be recognized on goodwill in any cash-generating unit or unit group under these conditions.

5. 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 [4].

The Bayer Group lost control of the Covestro Group at the end of the third quarter of 2017 and deconsolidated Covestro. As of December 31, 2017, there are four reportable segments: Pharmaceuticals, Consumer Health, Crop Science and Animal Health. Therefore, total figures for the four Life Science segments are no longer presented separately.

The segments' activities are as follows:

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Activities of the Segments

Segment	Activities
Pharmaceuticals	Development, production and marketing of prescription products, especially for cardiology and women's healthcare; specialty therapeutics in the areas of oncology, hematology and ophthalmology; 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, dietary supplement, analgesic, gastrointestinal, cold, allergy, sinus and flu, foot care and sun protection categories
Crop Science	Development, production and marketing of a broad portfolio of products in seeds and plant traits, crop protection and nonagricultural pest control
Animal Health	Development, production and marketing of prescription and nonprescription veterinary products

In the Crop Science segment, the Crop Protection / Seeds and Environmental Science operating segments were combined, mainly in light of the comparable nature of their products for the agricultural industry, such as in the area of crop protection and the related comparable production processes and comparable distribution methods, including via wholesalers in particular.

Business activities that cannot be allocated to any other segment are reported under "All Other Segments." These primarily include the services provided by the service areas: Business Services and Currenta.

The items in "Corporate Functions and Consolidation" mainly comprise the Bayer holding companies and and Leaps by Bayer (formerly the Bayer Lifescience Center), which focuses on the development of crucial, cross-species innovations. They also include the increase or decrease in expenses for Group-wide long-term stock-based compensation arising from fluctuations in the performance of Bayer stock, and the consolidation of intersegment sales (2017: €2.4 billion; 2016: €1.4 billion).

The segment data are calculated as follows:

- Table B 1/1 "Key Data by Segment" and the present chapter contain supplementary performance indicators that are not subject to requirements of the financial reporting standards governing the preparation of the Combined Management Report and the consolidated financial statements. The most important of these indicators are EBIT, EBITDA, EBIT before special items, EBITDA before special items, and the return on capital employed (ROCE). These supplementary indicators are defined, and their calculation explained, in Chapter 2.4 "Alternative Performance Measures Used by the Bayer Group" of the Combined Management Report in the Bayer Annual Report 2017.
- The intersegment sales reflect intra-Group transactions effected at transfer prices fixed on an arm's-length basis.
- The net cash provided by operating activities is the cash flow from operating activities as defined in IAS 7 (Statement of Cash Flows).
- The segment assets comprise all assets serving the respective segment, stated as of December 31, including material participating interests of direct relevance to business operations.
- The equity items reflect the earnings and carrying amounts of investments accounted for using the equity method.

Reconciliations

The reconciliations of EBITDA before special items, EBIT before special items and EBIT to Group income before income taxes and of the segments' assets to Group assets are given in the following tables:

B 5/2

Reconciliation of Segments' EBITDA Before Special Items to Group Income Before Income Taxes

€ million	2016	2017
EBITDA before special items of segments	9,656	9,724
EBITDA before special items of Corporate Functions and Consolidation	(338)	(436)
EBITDA before special items[1]	**9,318**	**9,288**
Depreciation, amortization and impairment losses/loss reversals before special items of segments	(2,486)	(2,145)
Depreciation, amortization and impairment losses/loss reversals before special items of Corporate Functions and Consolidation	(6)	(13)
Depreciation, amortization and impairment losses/loss reversals before special items	**(2,492)**	**(2,158)**
EBIT before special items of segments	7,170	7,579
EBIT before special items of Corporate Functions and Consolidation	(344)	(449)
EBIT before special items[1]	**6,826**	**7,130**
Special items of segments	(1,068)	(1,190)
Special items of Corporate Functions and Consolidation	(20)	(37)
Special items[1]	**(1,088)**	**(1,227)**
EBIT of segments	6,102	6,389
EBIT of Corporate Functions and Consolidation	(364)	(486)
EBIT[1]	**5,738**	**5,903**
Financial result	(965)	(1,326)
Income before income taxes	**4,773**	**4,577**

2016 figures restated

[1] For definition, see Combined Management Report, Chapter 2.4 "Alternative Performance Measures Used by the Bayer Group."

B 5/3

Reconciliation of Segments' Assets to Group Assets

€ million	2016	2017
Assets of the operating segments	**66,252**	**52,896**
Corporate Functions and Consolidation assets	507	4,207
Nonallocated assets	15,479	17,984
Group assets	**82,238**	**75,087**

Prior-year figures include Covestro

The reconciliation of the segments' sales to Group sales is apparent from the table of key data by segment in Note [1].

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 5/4

Information on Geographical Areas

	Net sales (external) – by market		Intangible assets and property, plant and equipment	
€ million	2016	2017	2016	2017
Europe / Middle East / Africa	**13,062**	**13,388**	**23,438**	**21,356**
of which Germany	3,329	3,392	12,468	10,856
of which Switzerland	510	485	5,047	5,190
North America	**10,066**	**10,143**	**14,693**	**10,354**
of which United States	8,706	8,561	14,297	10,056
Asia / Pacific	**7,413**	**7,637**	**4,116**	**1,771**
of which China	2,441	2,594	2,938	853
Latin America	**4,402**	**3,847**	**746**	**577**
of which Brazil	2,173	1,647	340	209
Total	**34,943**	**35,015**	**42,993**	**34,058**

2016 figures restated

Information on major customers

Revenues from transactions with a single customer in no case exceeded 10% of Bayer Group sales in 2017 or 2016.

6. Scope of consolidation; subsidiaries and affiliates

6.1 Changes in the scope of consolidation

Changes in the scope of consolidation in 2017 were as follows:

B 6.1/1

Change in Number of Consolidated Companies

Bayer AG and consolidated companies	Germany	Other countries	Total
December 31, 2016	64	237	301
Changes in scope of consolidation	(9)	(39)	(48)
Retirements	(5)	(11)	(16)
December 31, 2017	50	187	237

The decrease in the total number of consolidated companies in 2017 was primarily due to the deconsolidation of Covestro. Covestro AG has since been accounted for as an associate in the consolidated financial statements.

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.

GRI G4-17

Four (2016: five) associates and eight (2016: six) joint ventures were accounted for in the consolidated financial statements using the equity method. Details of these companies are given in Note [19].

Flagship Ventures V Agricultural Fund, L.P., United States, was included in the consolidated financial statements for the first time in 2015 and classified as an associate. Bayer has no control over this associate despite owning 99.9% of the capital, but is able to significantly influence its financial and operating policy decisions.

Bayer Trendlines Ag Innovation Fund, Limited Partnership, Israel, was included in the consolidated financial statements for the first time in 2016 and classified as an associate. Bayer is a limited partner and has no control over this entity due to contractual restrictions, despite owning 100% of the capital.

Nanjing Baijingyu Pharmaceutical Co., Ltd., China, was classified as an associate in view of Bayer's representation on its executive committee and supervisory board. This enables Bayer to significantly influence its financial and operating policy decisions despite owning only 15% of its voting rights and capital.

A total of 76 (2016: 72) subsidiaries, including one (2016: one) structured entities and 12 (2016: 12) associates or joint ventures that in aggregate are immaterial to the Bayer Group's financial position and results of operations are neither consolidated nor accounted for using the equity method, but are recognized at cost. 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 2017 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/owner17**.

6.2 Business combinations and other acquisitions

Business combinations and other acquisitions in 2017

The purchase price of the acquisition made in 2017 was €158 million (2016: minus €5 million). The purchase price of the acquired businesses was settled mainly in cash. Goodwill amounted to €51 million (2016: €9 million). It resulted from the following transaction:

On January 3, 2017, Bayer Animal Health acquired the Cydectin™ portfolio in the United States from Boehringer Ingelheim Vetmedica, Inc., St. Joseph, Missouri, United States. The acquisition comprises the CYDECTIN Pour-On, CYDECTIN Injectable and CYDECTIN Oral Drench endectocides for cattle and sheep. The acquisition is intended to strengthen the antiparasitics portfolio in the United States through the addition of endectocides. A purchase price of €158 million was agreed. The purchase price pertained mainly to trademarks and goodwill, which, as expected, is fully tax-deductible.

The effects of this transaction – as of the acquisition date – on the Group's assets and liabilities in 2017 are shown in the following table. The transaction resulted in the following cash outflow:

B 6.2/1

Acquired Assets and Assumed Liabilities (Fair Values at the Respective Acquisition Dates)

€ million	2016	2017
Goodwill	9	51
Patents and technologies	1	–
Trademarks	–	85
Production rights	–	4
R&D projects	(24)	–
Inventories	–	18
Provisions for pensions and other post-employment benefits	1	–
Deferred tax liabilities	8	–
Net assets	**(5)**	**158**
Purchase price	**(5)**	**158**
Net cash (inflow) outflow for acquisitions	**(5)**	**158**

In fiscal 2017, the Cydectin™ business contributed €31 million to the sales of the Bayer Group. After-tax income of €5 million was recorded for the Cydectin™ business from the date of first-time consolidation. This includes the financing costs incurred since the acquisition date.

On September 13, 2017, Bayer and Gingko Bioworks, Inc., Boston, Massachusetts, United States, founded the joint venture Cooksonia Opco LLC, Boston, Massachusetts, United States. The joint venture will focus on technologies to improve plant-associated microbes with a major focus on nitrogen fixation, which is important in agriculture. Capital contribution liabilities of US$70 million to Cooksonia Opco LLC were recognized in the statement of financial position as of December 31, 2017. These liabilities mature on December 31, 2024, at the latest. US$10 million was contributed in 2017.

Planned acquisitions

On September 14, 2016, Bayer signed a definitive merger agreement with Monsanto Company, St. Louis, Missouri, United States, which provides for Bayer's acquisition of all outstanding shares in Monsanto Company against a cash payment of US$128 per share. At the time this corresponded to an expected transaction volume of approximately US$66 billion, comprising an equity value (purchase price) of approximately US$56 billion and net debt to be assumed in an amount of US$10 billion, which includes pension obligations as of May 31, 2016, as well as liabilities for payments under stock-based compensation programs. Based on Monsanto's interim report as at November 30, 2017, the transaction value currently amounts to US$62 billion. Bayer thus has a contingent financial commitment in the amount of approximately US$56 billion to acquire Monsanto's entire outstanding capital stock. The planned transaction has been partially hedged against the euro / U.S. dollar currency risk using derivatives contracts.

The transaction brings together two different, but highly complementary businesses. Monsanto is a leading global provider of agricultural products, including seeds and seed technologies, herbicides, and digital platforms to give farmers agronomic recommendations. The combined business will offer a comprehensive portfolio of seed and crop protection products for a broad range of crops and indications, along with supporting digital farming applications. The combination also brings together both companies' leading innovation capabilities and R&D technology platforms.

Syndicated bank financing of US$56.9 billion was committed by Bank of America Merrill Lynch, Credit Suisse, Goldman Sachs, HSBC and JP Morgan upon the signing of the merger agreement. The credit facility was subsequently syndicated to more than 20 other partner banks of Bayer. Further refinancing of the purchase price is to be achieved through a capital increase, the issuance of bonds and existing liquidity. In November 2016, Bayer successfully placed mandatory convertible notes with a nominal value of €4 billion. The credit facility was reduced by the net proceeds from the mandatory convertible notes in 2016

and by the net proceeds from an exchangeable bond in June 2017. As of December 31, 2017, the credit facility amounts to US$51.5 billion.

The stockholders of Monsanto Company approved the merger with the requisite majority on December 13, 2016. The transaction remains subject to customary closing conditions, including relevant antitrust and other regulatory approvals. With the support of Monsanto, Bayer has initiated the process of obtaining the required regulatory approvals. In 2017, Bayer obtained regulatory approvals in 16 countries.

In connection with this transaction, Bayer reached an agreement with BASF in October 2017 regarding the sale of selected Crop Science businesses. Further information can be found in Note [6.3].

The merger agreement also provides for payment by Bayer of a US$2 billion reverse break fee, in particular, in the event that the transaction has not been closed at the latest by June 14, 2018, because a necessary antitrust approval has not been granted and Bayer or Monsanto therefore terminates the merger agreement.

Acquisitions in 2016

The following acquisitions and adjustments to purchase price allocations were reported in 2016:

In the course of the global purchase price allocation for SeedWorks India Pvt. Ltd, Hyderabad, India, which was acquired in July 2015, improved information obtained about the acquired assets in the first quarter of 2016 led to decreases of €23 million in intangible assets and €8 million in deferred tax liabilities and a corresponding increase of €13 million in goodwill in the opening statement of financial position. In addition, the purchase price declined by €2 million to €78 million following completion of the final purchase price negotiations.

On February 12, 2016, Bayer and CRISPR Therapeutics AG, Basel, Switzerland, established the joint venture Casebia Therapeutics LLP, Ascot, United Kingdom. Its purpose is the development and commercialization of new methods to treat blood disorders, blindness and heart diseases.

On December 9, 2016, Bayer and Versant Ventures, San Francisco, United States, established the joint venture BlueRock Therapeutics LP, San Francisco, United States. The joint venture will be active in the field of next-generation regenerative medicine. Its goal is to develop induced pluripotent stem cell (iPSC) therapies to cure a range of diseases.

6.3 Divestments, material sale transactions and discontinued operations

Divestments in 2017

The effects of divestments in 2017 on the consolidated financial statements were as follows:

In October 2015, Bayer successfully floated the former MaterialScience subgroup on the stock market under the name “Covestro”. In view of the remaining majority interest, Covestro was fully consolidated in the Bayer Group until the end of September 2017.

Following various share sales, the interest held directly by Bayer was reduced to 24.6% by the end of September 2017. The buyers of the approximately 14 million shares sold on September 29, 2017, agreed to be bound by a lock-up arrangement pursuant to which they would not sell the shares they purchased until at least December 11, 2017. Under the contractual agreement, Bayer retained economic exposure to the price of the shares. Bayer Pension Trust holds a further 8.9% of the equity of Covestro AG.

In addition, Bayer and Covestro signed a control termination agreement at the end of September, as part of which Bayer undertakes not to exercise certain voting rights at the Covestro Annual General Meeting. Bayer therefore ceded de facto control of Covestro at the end of September 2017. Accordingly, the Covestro Group was deconsolidated at the end of the third quarter and, in view of Bayer's remaining significant influence, was recognized for the first time as an associate. Further details of the accounting for the Covestro Group as an associate using the equity method are given in Note [19]. Details of share sales are provided in Note [24].

At the end of September, the fair value of the remaining interest, €3.6 billion, was determined on the basis of the share price. The deconsolidation and remeasurement of the remaining interest in Covestro resulted in overall income before taxes of €3.1 billion, which is included in income from discontinued operations. This figure reflects a gain of €2.4 billion from the remeasurement of the remaining interest, a gain of €0.5 billion from the deconsolidation, and a gain of €0.2 billion from the performance of the shares sold on September 29, 2017, in the fourth quarter of 2017. The overall gain after taxes amounted to €3.0 billion. A deferred tax expense of €32 million was accounted for as part of the remeasurement of the remaining interest. In addition, an amount of minus €0.6 billion recognized in other comprehensive income was reclassified to retained earnings attributable to Bayer AG stockholders.

The aforementioned divestment and additional smaller divestments had the following effect in 2017:

B 6.3/1

Divested Assets and Liabilities

€ million	2016	2017
Goodwill	36	254
Patents and technologies	4	18
Marketing and distribution rights	16	28
Other rights	–	33
Property, plant and equipment	–	4,206
Other noncurrent assets	–	233
Deferred taxes	–	506
Inventories	184	1,840
Other current assets	–	3,005
Assets held for sale	–	3
Cash and cash equivalents	–	637
Provisions for pensions and other post-employment benefits	(28)	(1,201)
Other provisions	(97)	(779)
Financial liabilities	–	(1,809)
Other liabilities	–	(1,715)
Divested net assets	**115**	**5,259**

Discontinued operations

Following the loss of control, Covestro fulfilled the conditions for presentation as a discontinued operation for all of the periods prior to deconsolidation, including the prior year.

The sale of the Diabetes Care business to Panasonic Healthcare Holdings Co., Ltd., Tokyo, Japan, for approximately €1 billion was completed on January 4, 2016. The sale included the leading Contour™ portfolio of blood glucose meters and strips, other blood glucose monitoring sysems such as Breeze™2 and Elite™, and Microlet™ lancing devices.

The sale of the Diabetes Care business also comprised further significant obligations by Bayer that were fulfilled over a period of up to two years subsequent to the date of divestment. The sale proceeds were recognized accordingly until the end of 2017 and reported as income from discontinued operations. Deferred income was recognized in the statement of financial position and was dissolved as the obligations were fulfilled. Of this, an amount of €462 million was recognized in sales in 2017.

The obligations fulfilled over a period of up to two years after the divestment of the Diabetes Care business are also reported as discontinued operations in the income statement and the statement of cash flows. They resulted in sales of €39 million in 2017.

The items in the statement of financial position pertaining to the Diabetes Care business are shown in the segment reporting under “All Other Segments.” The statement of financial position includes other receivables (net: €3 million), income tax liabilities (€57 million) and miscellaneous provisions (€2 million).

The sale of the Consumer business (CS Consumer) of Bayer’s Environmental Science unit to SBM Développement SAS, Lyon, France, was completed on October 4, 2016. These activities were reported as discontinued operations from the second half of 2016.

The income statements for the discontinued operations are given below:

B 6.3/2

Income Statements for Discontinued Operations

	Covestro		Diabetes Care		CS Consumer		Total	
€ million	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Net sales	**11,826**	**10,556**	**573**	**501**	**195**	**–**	**12,594**	**11,057**
Cost of goods sold	(8,539)	(6,973)	(146)	(28)	(121)	–	(8,806)	(7,001)
Gross profit	**3,287**	**3,583**	**427**	**473**	**74**	**–**	**3,788**	**4,056**
Selling expenses	(1,326)	(1,016)	(9)	(4)	(83)	–	(1,418)	(1,020)
Research and development expenses	(261)	(200)	(1)	–	(11)	–	(273)	(200)
General administration expenses	(452)	(345)	(12)	(8)	(9)	–	(473)	(353)
Other operating income / expenses	56	3,150	(4)	(3)	(55)	–	(3)	3,147
EBIT[1]	**1,304**	**5,172**	**401**	**458**	**(84)**	**–**	**1,621**	**5,630**
Financial result	**(190)**	**(124)**	**–**	**–**	**–**	**–**	**(190)**	**(124)**
Income before income taxes	**1,114**	**5,048**	**401**	**458**	**(84)**	**–**	**1,431**	**5,506**
Income taxes	(312)	(580)	(76)	(80)	27	–	(361)	(660)
Income after income taxes	**802**	**4,468**	**325**	**378**	**(57)**	**–**	**1,070**	**4,846**
of which attributable to noncontrolling interest	282	759	–	–	–	–	282	759
of which attributable to Bayer AG stockholders (net income)	520	3,709	325	378	(57)	–	788	4,087

[1] For definition, see Combined Management Report, Chapter 2.4 “Alternative Performance Measures Used by the Bayer Group.”

The cash flows for the discontinued operations are as follows:

B 6.3/3

Cash Flows from Discontinued Operations

	Covestro		Diabetes Care		CS Consumer		Total	
€ million	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Net cash provided by (used in) operating activities	1,824	1,473	788	50	42	–	2,654	1,523
Net cash provided by (used in) investing activities	(1,020)	(742)	–	–	–	–	(1,020)	(742)
Net cash provided by (used in) financing activities	1,014	(224)	(788)	(50)	(42)	–	184	(274)
Change in cash and cash equivalents	**1,818**	**507**	**–**	**–**	**–**	**–**	**1,818**	**507**

As no cash was assigned to the discontinued operations Diabetes Care and CS Consumer, the balance of the cash provided is deducted again in financing activities.

Assets held for sale

In connection with the planned acquisition of Monsanto, Bayer signed an agreement with BASF on October 13, 2017, concerning the sale of selected Crop Science businesses. The businesses to be sold comprise Bayer's global glufosinate ammonium business and the related LibertyLink™ technology for herbicide tolerance, a substantial part of the field crop seed business, including the related research and development capabilities. The seeds business being divested includes the global cotton seed business (excluding India and South Africa), the North American and European canola seed business, and the soybean seed business. The agreed base purchase price of €5.9 billion excludes the value of any net working capital and is subject to the customary adjustment mechanisms.

The transaction is subject to regulatory approvals as well as the successful closing of Bayer's acquisition of Monsanto. Bayer will continue to own, operate and maintain these businesses until the divestment is concluded.

The assets and liabilities held for sale are presented below:

B 6.3/4

Assets and Liabilities Held for Sale

€ million	**Dec. 31, 2017**
Goodwill	479
Other intangible assets	287
Property, plant and equipment	1,062
Other receivables	41
Deferred taxes	63
Inventories	149
Assets held for sale	**2,081**
Provisions for pensions and other post-employment benefits	11
Other provisions	79
Financial liabilities	14
Other liabilities	4
Deferred taxes	3
Liabilities directly related to assets held for sale	**111**

Notes to the Income Statements

7. Net sales

Net sales are derived primarily from product deliveries. Total reported net sales for 2017 amounted to €35,015 million, rising by €72 million, or 0.2%, compared with 2016. The increase resulted from the following factors:

B 7/1

Factors in Sales Development

	2017	
	€ million	**%**
Volume	810	+2.3
Price	(269)	−0.8
Currency	(490)	−1.4
Portfolio	21	+0.1
Total	**72**	**+0.2**

Breakdowns of net sales by segment and geographical area are given in the table in Note [1] and in Note [5], respectively.

8. Selling expenses

Selling expenses comprise all expenses incurred in the reporting period for the sale, storage and transportation of saleable products, advertising, the provision of advice to customers, and market research.

9. Research and development expenses

Research and development expenses and their accounting treatment are defined in Note [4]. Breakdowns of research and development expenses by segment and region are given in Note [1].

10. Other operating income

Other operating income was comprised as follows:

B 10/1

Other Operating Income

€ million	2016	2017
Gains on retirements of noncurrent assets	64	173
Reversal of impairment losses on receivables	18	23
Reversals of unutilized provisions	122	26
Gains from derivatives	255	291
Miscellaneous operating income	328	351
Total	**787**	**864**
of which special items	115	14

2016 figures restated

Gains on retirements of noncurrent assets included an €81 million gain from the sale of trademark rights for the Vagitrol™, Benadon™, Claradol™, Transipeg™ and Colopeg™ brands and some smaller brands (Consumer Health segment). In addition, a €49 million gain was realized on the sale of capitalized transfer rights by Bayer 04 Leverkusen Fußball GmbH (All Other Segments), Germany. In the Crop Science segment, a license agreement for herbicide active ingredients with FMC Corporation, United States resulted in income of €18 million..

Miscellaneous operating income includes a receivable relating to the nonfulifillment of a purchase obligation by one of our distribution partners in the amount of €34 million (Pharmaceuticals segment). The Crop Science segment received €25 million from insurers. A further €13 million was generated by the sale of research data following patent expirations (Crop Science segment). The transfer of a database to the joint venture Cooksonia Opco LLC, United States, with Ginkgo Bioworks, Inc., United States, brought additional income of €9 million for the Crop Science segment. In addition, a claim for damages of €8 million resulting from an infringement of a patent for Yasmin™ was recorded in the Pharmaceuticals segment.

Income from reversals of unutilized provisions included €9 million from the reversal of provisions for the Yasmin™ / YAZ™ litigation (2016: €104 million).

Furthermore, in 2016 miscellaneous operating income included a gain of €32 million at Bayer 04 Leverkusen Fußball GmbH from the sale of non-capitalized transfer rights (All Other Segments). In the Crop Science segment, milestone payments led to income of €21 million. In the Pharmaceuticals segment, a €14 million compensation payment was received in connection with the closure of the production site in Putuo, China. A €10 million gain (All Other Segments) was incurred on the sale of the BAYQUIK™ technology to Chemetics, Inc., Canada (Corporate Functions segment).

11. Other operating expenses

Other operating expenses were comprised as follows:

B 11/1

Other Operating Expenses

€ million	2016	2017
Losses on retirements of noncurrent assets	(19)	(39)
Impairment losses on receivables	(163)	(139)
Expenses related to significant legal risks	(262)	(258)
Losses from derivatives	(171)	(258)
Miscellaneous operating expenses	(264)	(254)
Total	**(879)**	**(948)**
of which special items	(205)	(202)

2016 figures restated

Of the impairment losses on receivables, €74 million (2016: €115 million) pertained to past-due receivables in Brazil.

The expenses related to significant legal risks amounted to €258 million in 2017 (2016: €262 million), which, as in the previous year, primarily included expenses in connection with litigation relating to the produts Xarelto™, Essure™ and Cipro™ / Avelox™.

Miscellaneous operating expenses included donations to charitable causes (all segments) and subsidies for patient assistance programs with government agencies and partners of health care systems (Pharmaceuticals segment) in the amount €52 million (2016: €43 million). A settlement relating to a seed license agreement led to an expense of €14 million (Crop Science segment). Further expenses of €11 million were incurred in connection with intellectual property and patent disputes about a herbicide active ingredient (Crop Science segment). In addition, expenses of €11 million were recorded for restructuring at Currenta GmbH & Co. OHG, Germany (All Other Segments).

The remaining amount of miscellaneous operating expenses comprised a large number of individually immaterial items at the subsidiaries.

In 2016, miscellaneous operating expenses included €34 million for provisions established by the Crop Science segment for environmental protection measures in the United States.

12. Personnel expenses and employee numbers

Personnel expenses for continuing operations rose in 2017 by €69 million to €9,528 million (2016: €9,459 million). The change was mainly due to higher expenses in connection with compensation adjustments, which were partially offset by lower employee bonuses.

B 12/1

Personnel Expenses

€ million	2016	2017
Salaries	7,602	7,567
Social expenses and expenses for pensions and other benefits	1,857	1,961
of which for defined contribution pension plans	491	488
of which for defined benefit and other pension plans	389	445
Total	**9,459**	**9,528**

2016 figures restated

The personnel expenses shown here do not contain the interest portion of the allocation to personnel-related provisions – mainly for pensions and other post-employment benefits – which is included in the financial result under other financial expenses (Note [13.3]).

The average numbers of employees, classified by corporate function, were as shown in the table below:

B 12/2

Employees

	2016	2017
Production	40,397	39,298
Marketing and distribution	37,270	37,147
Research and development	13,999	13,958
General administration	8,322	9,359
Total	**99,988**	**99,762**
Apprentices	1,998	1,918

2016 figures restated

The number of employees on either permanent or temporary contracts is stated in full-time equivalents (FTE), with part-time employees included on a pro-rated basis in line with their contractual working hours. The figures do not include apprentices.

13. Financial result

The financial result for 2017 was minus €1,326 million (2016: minus €965 million), comprising equity-method income of €20 million (2016: loss of €6 million), financial expenses of €1,635 million (2016: €1,108 million) and financial income of €289 million (2016: €149 million). Details of the components of the financial result are provided in the following sections.

13.1 Income (loss) from investments in affiliated companies

The net income (loss) from investments in affiliated companies was comprised as follows:

B 13.1/1

Income (Loss) from Investments in Affiliated Companies

€ million	2016	2017
Net income (loss) from investments accounted for using the equity method (equity-method income / loss)	(6)	20
Expenses		
Impairment losses on investments in affiliated companies	(2)	(1)
Losses from the sale of investments in affiliated companies	–	(1)
Income		
Impairment loss reversals on investments in affiliated companies	–	5
Income / losses from investments in affiliated companies and from profit and loss transfer agreements (net)	–	2
Gains from the sale of investments in affiliated companies	6	5
Total	**(2)**	**30**

2016 figures restated

The main components of the income from investments in affiliated companies were the equity-method income of €51 million from the remaining interest in Covestro and the equity-method losses of €16 million (2016: €4 million) and €15 million (2016: €3 million), respectively, from the Casebia Group and the BlueRock joint ventures.

Further details of the companies accounted for using the equity method are given in Note [19].

13.2 Net interest expense

The net interest expense was comprised as follows:

B 13.2/1

Net Interest Expense

€ million	2016	2017
Expenses		
Interest and similar expenses	(638)	(682)
Interest expenses for derivatives (held for trading)	(3)	(3)
Income		
Interest and similar income	135	272
Interest income from derivatives (held for trading)	2	–
Total	**(504)**	**(413)**

2016 figures restated

Interest and similar expenses included interest expense of €54 million (2016: €41 million) relating to non-financial liabilities. Interest and similar income included interest income of €96 million (2016: €10 million) from nonfinancial assets.

The change in the liability for redeemable noncontrolling interest is reflected in interest income or expense. In 2017, a €49 million (2016: €0 million) increase in this liability was recognized as interest expense.

13.3 Other financial income and expenses

Other financial income and expenses were comprised as follows:

B 13.3/1

Other Financial Income and Expenses

€ million	2016	2017
Expenses		
Interest portion of interest-bearing provisions	(251)	(189)
Exchange loss	(121)	(326)
Miscellaneous financial expenses	(93)	(433)
Income		
Miscellaneous financial income	6	5
Total	**(459)**	**(943)**

2016 figures restated

The interest portion of noncurrent provisions comprised €191 million (2016: €236 million) in interest expense for pension and other post-employment benefit provisions and a positive amount of €2 million (2016: minus €15 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 €539 million (2016: €640 million) for the unwinding of discount on the present value of the defined benefit obligation and €348 million (2016: €404 million) in interest income from plan assets.

The miscellaneous financial expenses included €210 million in commitment fees and other fees related to the syndicated bank financing for the planned acquisition of Monsanto. The €172 million in negative fair value changes of the debt instruments (exchangeable bond) issued in June 2017 was also recognized in miscellaneous financial expenses.

14. Taxes

The breakdown of tax expenses by origin was as follows:

B 14/1

Tax Expense by Origin

	2016		2017	
€ million		Of which income taxes		Of which income taxes
Taxes paid or accrued				
Current income taxes				
Germany	(864)		(794)	
Other countries	(725)		(737)	
Other taxes				
Germany	(80)		(87)	
Other countries	(137)		(118)	
	(1,806)	**(1,589)**	**(1,736)**	**(1,531)**
Deferred taxes				
from temporary differences	524		70	
from tax loss and interest carryforwards and tax credits	48		132	
	572	**572**	**202**	**202**
Total	**(1,234)**	**(1,017)**	**(1,534)**	**(1,329)**

2016 figures restated

The other taxes mainly include land, vehicle and other indirect taxes. They are reflected in the respective functional cost items.

The deferred tax assets and liabilities were allocable to the following items in the statements of financial position:

B 14/2

Deferred Tax Assets and Liabilities

	Dec. 31, 2016		Dec. 31, 2017	
€ million	**Deferred tax assets**	**Deferred tax liabilities**	**Deferred tax assets**	**Deferred tax liabilities**
Intangible assets	1,478	1,766	799	1,469
Property, plant and equipment	264	692	79	323
Financial assets	240	224	204	81
Inventories	1,267	32	1,117	15
Receivables	71	547	60	464
Other assets	39	13	39	2
Provisions for pensions and other post-employment benefits	3,637	983	2,520	367
Other provisions	1,083	112	610	64
Liabilities	793	133	534	101
Tax loss and interest carryforwards	473		486	–
Tax credits	177		200	–
	9,522	**4,502**	**6,648**	**2,886**
of which noncurrent	7,868	3,662	5,194	2,214
Set-off	(3,172)	(3,172)	(1,733)	(1,733)
Total	**6,350**	**1,330**	**4,915**	**1,153**

Deferred taxes on remeasurements, recognized outside profit or loss, of the net liability for defined benefit pension and other post-employment benefits diminished equity by €515 million (2016: increased equity by €228 million). Deferred taxes on changes, recognized outside profit or loss, in fair values of available-for-sale financial assets and derivatives designated as hedges increased equity by €56 million (2016: diminished equity by €24 million). These effects on equity are reported in the statement of comprehensive income.

The use of tax loss carryforwards reduced current income taxes in 2017 by €47 million (2016: €82 million). The use of tax credits reduced current income taxes by €16 million (2016: €16 million).

Of the total tax loss and interest carryforwards of €6,443 million, including interest carryforwards of €148 million (2016: €5,447 million, including interest carryforwards of €118 million), an amount of €2,890 million, including interest carryforwards of €1 million (2016: €2,269 million, including interest carryforwards of €0 million) is expected to be usable within a reasonable period. The increase in tax loss and interest carryforwards was mainly due to the current development of business in the United States and Brazil. Deferred tax assets of €486 million (2016: €473 million) were recognized for the amount of tax loss and interest carryforwards expected to be usable.

The use of €3,553 million of tax loss and interest carryforwards, including interest carryforwards of €147 million (2016: €3,178 million, including interest carryforwards of €118 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 €351 million (2016: €294 million) would have been recognized.

Tax credits of €200 million were recognized in 2017 (2016: €177 million) as deferred tax assets. The use of €28 million (2016: €37 million) of tax credits was subject to legal or economic restrictions. Consequently, no deferred tax assets were recognized for this amount.

Unusable tax credits, tax loss carryforwards and interest carryforwards will expire as follows:

B 14/3

Expiration of Unusable Tax Credits, Tax Loss and Interest Carryforwards

	Tax credits		Tax loss and interest carryforwards	
€ million	**Dec. 31, 2016**	**Dec. 31, 2017**	**Dec. 31, 2016**	**Dec. 31, 2017**
Within one year	4	4	4	17
Within two years	–	–	1	15
Within three years	4	–	31	114
Within four years	–	1	132	28
Within five years	29	19	31	70
Thereafter	–	4	2,979	3,309
Total	**37**	**28**	**3,178**	**3,553**

In 2017, subsidiaries that reported losses for 2017 or 2016 recognized net deferred tax assets totaling €2,303 million (2016: €2,575 million) from temporary differences and tax loss carryforwards. These assets were considered to be unimpaired because the companies concerned were expected to generate taxable income in the future.

Deferred tax liabilities of €22 million were recognized in 2017 (2016: €41 million) for planned dividend payments by subsidiaries. Deferred tax liabilities were not recognized for differences on €18,272 million (2016: €20,069 million) of retained earnings of subsidiaries because these earnings are to be reinvested for an indefinite period.

The reported tax expense of €1,329 million for 2017 (2016: €1,017 million) differed by minus €246 million (2016: €135 million) from the expected tax expense of €1,083 million (2016: €1,152 million) that would have resulted from applying an expected weighted average tax rate to the pre-tax income of the Group. This average rate, derived from the expected tax rates of the individual Group companies, was 23.7% in 2017 (2016: 24.1%). The effective tax rate was 29.0% (2016: 21.3%).

The reconciliation of expected to reported income tax expense and of the expected to the effective tax rate for the Group was as follows:

B 14/4

Reconciliation of Expected to Actual Income Tax Expense

	2016		2017	
	€ million	%	€ million	%
Expected income tax expense and expected tax rate	**1,152**	**24.1**	**1,083**	**23.7**
Reduction in taxes due to tax-free income				
Income related to the operating business	(127)	(2.6)	(135)	(3.0)
Income from affiliated companies and divestment proceeds	(1)	–	(16)	(0.3)
First-time recognition of previously unrecognized deferred tax assets on tax loss and interest carryforwards	(17)	(0.4)	(31)	(0.7)
Use of tax loss and interest carryforwards on which deferred tax assets were not previously recognized	(2)	–	(4)	(0.1)
Increase in taxes due to non-tax-deductible expenses				
Expenses related to the operating business	142	3.0	168	3.7
Impairment losses on investments in affiliated companies	2	–	–	–
New tax loss and interest carryforwards unlikely to be usable	43	0.9	69	1.5
Existing tax loss and interest carryforwards on which deferred tax assets were previously recognized but which are unlikely to be usable	6	0.1	1	–
Tax income (–) and expenses (+) relating to other periods	(76)	(1.6)	(128)	(2.8)
Tax effects of changes in tax rates	(5)	(0.1)	384	8.4
Other tax effects	(100)	(2.1)	(62)	(1.4)
Actual income tax expense and effective tax rate	**1,017**	**21.3**	**1,329**	**29.0**

2016 figures restated

The reported tax expense contains a one-time effect in the amount of €455 million that results solely from the U.S. tax reform passed on December 22, 2017, which provides for a reduction in the corporate tax rate from 35% to 21% from January 1, 2018, leading to a remeasurement of all deferred tax assets and liabilities associated with U.S. companies. This resulted in deferred tax expense of €409 million for 2017 due to changes in tax rates. The additional tax on nonrepatriated profits, which previously had not been taxed in the United States, led to prior-period tax expenses of €46 million.

15. Income/losses attributable to noncontrolling interest

Income attributable to noncontrolling interest amounted to €791 million (2016: €468 million). Losses attributable to noncontrolling interest amounted to €33 million (2016: €173 million). As in the previous years, the income and losses primarily related to Covestro.

16. Earnings per share

Earnings per share from continuing operations are determined according to IAS 33 (Earnings per Share) by dividing net income (income after income taxes attributable to Bayer AG stockholders) minus income from discontinued operations after income taxes (attributable to Bayer AG stockholders) by the weighted average number of shares. Earnings per share for continuing and discontinued operations are calculated by dividing net income by the weighted average number of shares.

In November 2016, Bayer placed €4.0 billion in mandatory convertible notes without granting subscription rights to existing stockholders of the company. According to IAS 33.23, the weighted average number of shares increases as soon as the notes contract is signed, and this increase must be taken into account in calculating undiluted and diluted earnings per share. The new weighted average number of shares is based on a minimum conversion price that is adjusted annually due to the dividend payment and determines the maximum conversion ratio. The minimum conversion price stood at €87.82 as of December 31, 2017 (December 31, 2016: €90.00). Undiluted and diluted earnings per share are not adjusted for financing expenses incurred in connection with the mandatory convertible notes because the interest component was recognized outside profit or loss when the notes were placed. Further details of the mandatory convertible notes are provided in Note [24].

Since the undiluted and diluted earnings per share were determined for each interim reporting period, earnings per share for the full year or year to date may differ from the sum of the earnings per share for the respective interim reporting periods.

B 16/1

Earnings per Share

€ million	2016	2017
Income from continuing operations after income taxes	3,756	3,248
of which attributable to noncontrolling interest	13	(1)
of which attributable to Bayer AG stockholders	3,743	3,249
Income from discontinued operations after income taxes	1,070	4,846
of which attributable to noncontrolling interest	282	759
of which attributable to Bayer AG stockholders	788	4,087
Income after income taxes	4,826	8,094
of which attributable to noncontrolling interest	295	758
of which attributable to Bayer AG stockholders (net income)	4,531	7,336
	Shares	Shares
Weighted average number of shares	**832,502,808**	**872,107,808**
Earnings per share (€)		
From continuing operations		
Basic	4.50	3.73
Diluted	4.50	3.73
From discontinued operations		
Basic	0.94	4.68
Diluted	0.94	4.68
From continuing and discontinued operations		
Basic	5.44	8.41
Diluted	5.44	8.41

2016 figures restated

Notes to the Statements of Financial Position

17. Goodwill and other intangible assets

Changes in intangible assets in 2017 were as follows:

B 17/1

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, 2016	**16,312**	**13,162**	**11,045**	**2,044**	**2,138**	**887**	**2,666**	**48,254**
Acquisitions	51	–	85	–	4	–	–	140
Capital expenditures	–	78	–	54	–	458	167	757
Retirements	–	(61)	(31)	(4)	–	(220)	(365)	(681)
Transfers	–	–	1	45	–	17	(63)	–
Transfers (IFRS 5)	(481)	(123)	(40)	(14)	(118)	(43)	(403)	(1,222)
Divestments / changes in the scope of consolidation	(254)	(31)	(5)	(105)	(96)	–	(322)	(813)
Inflation adjustment (IAS 29)	5	–	–	–	–	–	–	5
Exchange differences	(882)	(164)	(602)	(109)	(5)	(55)	(116)	(1,933)
December 31, 2017	**14,751**	**12,861**	**10,453**	**1,911**	**1,923**	**1,044**	**1,564**	**44,507**
Accumulated amortization and impairment losses, December 31, 2016	**–**	**9,312**	**3,673**	**1,268**	**2,027**	**235**	**1,860**	**18,375**
Retirements	–	(36)	(20)	(4)	–	(201)	(356)	(617)
Amortization and impairment losses in 2017	–	596	580	170	21	98	228	1,693
Amortization	–	596	369	133	21	–	118	1,237
Impairment losses	–	–	211	37	–	98	110	456
Impairment loss reversals	–	–	–	–	–	–	–	–
Transfers	–	–	–	1	–	–	(1)	–
Transfers (IFRS 5)	–	(86)	(39)	(9)	(118)	(2)	(199)	(453)
Divestments / changes in the scope of consolidation	–	(13)	(5)	(77)	(90)	–	(295)	(480)
Exchange differences	–	(135)	(148)	(66)	(4)	(13)	(70)	(436)
December 31, 2017	**–**	**9,638**	**4,041**	**1,283**	**1,836**	**117**	**1,167**	**18,082**
Carrying amounts, December 31, 2017	**14,751**	**3,223**	**6,412**	**628**	**87**	**927**	**397**	**26,425**
Carrying amounts, December 31, 2016	**16,312**	**3,850**	**7,372**	**776**	**111**	**652**	**806**	**29,879**

Capital expenditures for research and development projects include an advance payment to Loxo Oncology, Inc., in the amount of US$400 million as part of an exclusive global collaboration relating to the development and marketing of larotrectinib.

Impairment losses of €456 million were recognized on intangible assets. In the Pharmaceuticals segment, impairment losses of €69 million were recognized on intangible assets in the oncology area (OncoMed). In addition, impairment losses of €59 million were recognized on a drug candidate for the treatment of lung infections (Amikacin Inhale) due to new research findings. Furthermore, impairment losses of €65 million were recognized on intangible assets in the women's health and ophthalmology areas. In the Consumer Health segment, a weaker market environment led to impairment losses of €155 million for a sunscreen product brand (Coppertone™) and €47 million on a trademark in the allergies area (Aerius™). In the Crop Science segment, an impairment loss of €41 million was recognized in connection with the termination of a research project.

The remaining impairment losses pertained to intangible assets in the Pharmaceuticals (€2 million), Consumer Health (€3 million), Crop Science (€5 million) and Animal Health (€9 million) segments along with All Other Segments (€1 million).

Details of acquisitions and divestments are provided in Notes [6.2] and [6.3]. The impairment testing procedure for goodwill and other intangible assets is explained in Note [4].

Changes in intangible assets in 2016 were as follows:

B 17/2

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, 2015	**16,096**	**13,069**	**10,952**	**1,944**	**2,172**	**946**	**2,600**	**47,779**
Acquisitions	9	1	–	–	–	(23)	–	(13)
Capital expenditures	–	55	3	47	5	96	157	363
Retirements	–	(6)	(39)	(14)	(25)	(108)	(80)	(272)
Transfers	–	5	–	50	3	(43)	(15)	–
Transfers (IFRS 5)	–	(5)	(8)	(15)	(16)	–	(11)	(55)
Divestments / changes in the scope of consolidation	–	–	(8)	–	–	–	–	(8)
Inflation adjustment (IAS 29)	3	–	–	–	–	–	–	3
Exchange differences	204	43	145	32	(1)	19	15	457
December 31, 2016	**16,312**	**13,162**	**11,045**	**2,044**	**2,138**	**887**	**2,666**	**48,254**

B 17/2 (continued)

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
Accumulated amortization and impairment losses, December 31, 2015	**–**	**8,277**	**3,083**	**1,134**	**2,021**	**225**	**1,765**	**16,505**
Retirements	–	(2)	(38)	(14)	(25)	(106)	(66)	(251)
Amortization and impairment losses in 2016	–	1,007	604	144	48	109	160	2,072
Amortization	–	708	393	137	28	–	129	1,395
Impairment losses	–	299	211	7	20	109	31	677
Impairment loss reversals	–	–	(1)	–	–	–	–	(1)
Transfers	–	–	–	–	–	–	–	–
Transfers (IFRS 5)	–	(5)	(8)	(15)	(16)	–	(11)	(55)
Divestments / changes in the scope of consolidation	–	–	–	–	–	–	(1)	(1)
Exchange differences	–	35	33	19	(1)	7	13	106
December 31, 2016	**–**	**9,312**	**3,673**	**1,268**	**2,027**	**235**	**1,860**	**18,375**
Carrying amounts, December 31, 2016	**16,312**	**3,850**	**7,372**	**776**	**111**	**652**	**806**	**29,879**
Carrying amounts, December 31, 2015	**16,096**	**4,792**	**7,869**	**810**	**151**	**721**	**835**	**31,274**

Goodwill and other intangible assets with an indefinite useful life that are of material significance for the Bayer Group are allocated to the following cash-generating units or unit groups as of the end of the reporting period:

B 17/3

Intangible Assets with an Indefinite Useful Life

Reporting segment	Cash-generating unit / unit group	Goodwill (€ million)	Material intangible assets with indefinite useful life (€ million)
Pharmaceuticals	Pharmaceuticals	7,105	857
Consumer Health	Consumer Care	5,854	24
Crop Science	Crop Protection	1,120	41
Crop Science	Seeds	122	98

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. Development projects were capitalized at a total amount of €927 million as of the end of 2017 (2016: €652 million).

Another intangible asset classified as having an indefinite useful life 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.

18. Property, plant and equipment

Changes in property, plant and equipment in 2017 were as follows:

B 18/1

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, 2016	**10,346**	**20,335**	**2,297**	**2,551**	**35,529**
Acquisitions	–	–	–	–	–
Capital expenditures	286	460	193	1,022	1,961
Retirements	(82)	(304)	(143)	–	(529)
Transfers	282	699	52	(1,033)	–
Transfers (IFRS 5)	(498)	(601)	(66)	(240)	(1,405)
Divestments / changes in the scope of consolidation	(3,167)	(11,059)	(500)	(455)	(15,181)
Inflation adjustment (IAS 29)	5	–	–	–	5
Exchange differences	(466)	(884)	(112)	(82)	(1,544)
December 31, 2017	**6,706**	**8,646**	**1,721**	**1,763**	**18,836**
Accumulated depreciation and impairment losses, December 31, 2016	**5,592**	**15,111**	**1,685**	**27**	**22,415**
Retirements	(60)	(280)	(125)	–	(465)
Depreciation and impairment losses in 2017	334	893	223	5	1,455
Depreciation	310	860	222	–	1,392
Impairment losses	24	33	1	5	63
Impairment loss reversals	(7)	(6)	–	–	(13)
Transfers	6	4	(1)	(9)	–
Transfers (IFRS 5)	(82)	(214)	(31)	–	(327)
Divestments / changes in the scope of consolidation	(1,923)	(8,631)	(420)	(1)	(10,975)
Exchange differences	(199)	(610)	(75)	(3)	(887)
December 31, 2017	**3,661**	**6,267**	**1,256**	**19**	**11,203**
Carrying amounts, December 31, 2017	**3,045**	**2,379**	**465**	**1,744**	**7,633**
Carrying amounts, December 31, 2016	**4,754**	**5,224**	**612**	**2,524**	**13,114**

Including impairment loss reversals of €13 million, net impairment losses totaling €50 million were recognized on property, plant and equipment in the Pharmaceuticals (€23 million), Consumer Health (€8 million), and Crop Science (€25 million) segments, as well as All Other Segments (€1 million), while impairment loss reversals were recognized for Covestro (€7 million).

In 2017, borrowing costs of €31 million (2016: €31 million) were capitalized as components of the cost of acquisition or construction of qualifying assets, applying an average interest rate of 2.5% (2016: 2.5%).

Capitalized property, plant and equipment included assets with a total net value of €231 million (2016: €471 million) held under finance leases. The cost of acquisition or construction of these assets as of the closing date totaled €368 million (2016: €867 million). They comprised buildings with a carrying amount of €98 million (2016: €146 million), plant installations and machinery with a carrying amount of €75 million (2016: €191 million), and other property, plant and equipment with a carrying amount of €58 million (2016: €134 million). For information on the liabilities arising from finance leases, see Note [27].

In 2017, rental payments of €385 million (2016: €346 million), excluding Covestro, were made for assets held under operating leases as defined in IAS 17 (Leases).

Lease payments of €1 million are expected to be received in 2018 from operating leases – as defined in IAS 17 (Leases) – pertaining to property, plant and equipment, excluding the investment property stated below. Lease payments totaling €1 million are expected to be received between 2019 and 2022 and lease payments totaling €0 million after 2022.

Investment property

The fair values of investment property are mainly determined using the income approach based on internal valuations for buildings and developed sites, and using the market comparison approach for undeveloped sites.

The total carrying amount of investment property as of December 31, 2017, was €97 million (December 31, 2016: €136 million). The fair value of this property was €336 million (2016: €507 million). The rental income from investment property was €14 million (2016: €11 million), and the operating expenses directly allocable to this property amounted to €4 million (2016: €5 million). A further amount of €1 million (2016: €1 million) in operating expenses was directly allocable to investment property from which no rental income was derived.

Changes in property, plant and equipment in 2016 were as follows:

B 18/2

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, 2015	**9,685**	**19,418**	**2,142**	**2,295**	**33,540**
Acquisitions	–	–	–	–	–
Capital expenditures	248	369	206	1,441	2,264
Retirements	(69)	(262)	(158)	(9)	(498)
Transfers	407	698	82	(1,187)	–
Transfers (IFRS 5)	(14)	(4)	(1)	(1)	(20)
Divestments / changes in the scope of consolidation	–	–	–	–	–
Inflation adjustment (IAS 29)	3	1	–	–	4
Exchange differences	86	115	26	12	239
December 31, 2016	**10,346**	**20,335**	**2,297**	**2,551**	**35,529**

B 18/2 (continued)

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
Accumulated depreciation and impairment losses, December 31, 2015	**5,255**	**14,303**	**1,578**	**29**	**21,165**
Retirements	(49)	(245)	(139)	(6)	(439)
Depreciation and impairment losses in 2016	334	936	235	5	1,510
Depreciation	314	927	234	–	1,475
Impairment losses	20	9	1	5	35
Impairment loss reversals	–	–	–	–	–
Transfers	5	(4)	–	(1)	–
Transfers (IFRS 5)	(2)	(1)	(1)	–	(4)
Divestments / changes in the scope of consolidation	–	–	–	–	–
Divestments / changes in the scope of consolidation	–	–	–	–	–
Exchange differences	49	122	12	–	183
December 31, 2016	**5,592**	**15,111**	**1,685**	**27**	**22,415**
Carrying amounts, December 31, 2016	**4,754**	**5,224**	**612**	**2,524**	**13,114**
Carrying amounts, December 31, 2015	**4,430**	**5,115**	**564**	**2,266**	**12,375**

19. Investments accounted for using the equity method

Four (2016: five) associates and eight (2016: six) joint ventures were accounted for in the consolidated financial statements using the equity method.

B 19/1

Associates and Joint Ventures Accounted for Using the Equity Method

Company name	Place of business	Bayer's interest (%)
Associates		
Bayer Trendlines Ag Innovation Fund, L.P [1]	Misgav, Israel	100
Covestro AG	Leverkusen, Germany	24.6
Flagship Ventures V Agricultural Fund, L.P [1]	Cambridge, Massachusetts, U.S.A.	99.9
Nanjing Baijingyu Pharmaceutical Co., Ltd.[1]	Nanjing, China	15
Joint ventures		
Bayer Zydus Pharma Private Limited	Mumbai, India	50
BlueRock Therapeutics Canada ULC	Vancouver, Canada	42.9
BlueRock Therapeutics GP LLC	San Francisco, California, U.S.A.	50
BlueRock Therapeutics LP	San Francisco, California, U.S.A.	42.9
Casebia Therapeutics LLC	Cambridge, Massachusetts, U.S.A.	50
Casebia Therapeutics LLP	Ascot, U.K.	50
Cooksonia Opco LLC	Boston, Massachusetts, U.S.A.	50
DCSO Deutsche Cyber-Sicherheitsorganisation GmbH	Berlin, Germany	25

[1] For information concerning significant influence, see Note [6.1].

In October 2015, Bayer successfully floated the former MaterialScience subgroup on the stock market under the name “Covestro”. Covestro is a leading global producer of high-tech polymer materials and develops innovative product solutions for a wide variety of everyday uses. The Covestro Group was deconsolidated at the end of the third quarter of 2017, and, in view of Bayer’s remaining significant influence, was recognized for the first time as an associate and accounted for using the equity method. See Note [6.3] for details on the deconsolidation of the Covestro Group.

The remaining interest in Covestro at the time of deconsolidation was remeasured at €3.6 billion based on its share price, which led to the identification of hidden reserves and liabilities. According to the purchase price allocation, the hidden reserves and liabilities primarily related to noncurrent assets (€1.9 billion), current assets (€0.1 billion), noncurrent liabilities (€0.6 billion) and goodwill (€1.0 billion).

The following two tables contain summarized data from the income statements and statements of financial position of the Covestro Group, and show the respective amounts recognized in the consolidated financial statements of the Bayer Group.

B 19/2

Earnings Data of the Covestro Group

€ million	2016	Q4 2017
Net sales	–	3,522
Income after income taxes	–	569
of which attributable to Covestro AG shareholders	–	566
Other comprehensive income after income taxes	–	(193)
of which attributable to Covestro AG shareholders	–	(191)
Total comprehensive income after income taxes	–	376
of which attributable to Covestro AG shareholders	–	375
Share of total comprehensive income after income taxes	–	92
Share of income after income taxes	**–**	**139**
Group adjustments	–	(88)
Equity-method income	**–**	**51**

B 19/3

Data from the Statements of Financial Position of the Covestro Group

€ million	Dec. 31, 2016	Dec. 31, 2017
Noncurrent assets	–	5,606
Current assets	–	5,735
Noncurrent liabilities	–	2,885
Current liabilities	–	3,091
Equity	–	5,365
Share of equity	**–**	**1,320**
Group adjustments	–	2,307
Carrying amount	**–**	**3,627**

The adjustments to the Group data contain hidden reserves and liabilities identified in the course of the purchase price allocation and their measurement using the equity method.

In December 2015, Bayer and CRISPR Therapeutics AG, Switzerland, agreed to establish a company to develop and commercialize new, breakthrough therapeutics for blood disorders, blindness and congenital heart diseases. The joint venture Casebia Therapeutics, established at the beginning of 2016, has access to gene-editing technology from CRISPR Therapeutics in specific disease areas, as well as access to protein engineering expertise and relevant disease know-how through Bayer.

The following two tables contain summarized data from the income statements and statements of financial position of the Casebia Group, which is accounted for using the equity method, and show the respective amounts recognized in the consolidated financial statements of the Bayer Group.

B 19/4

Earnings Data of the Casebia Group

€ million	2016	2017
Net sales	–	–
Loss after income taxes	(8)	(32)
Share of loss after income taxes	(4)	(16)
Equity-method loss	**(4)**	**(16)**

B 19/5

Data from the Statements of Financial Position of the Casebia Group

€ million	Dec. 31, 2016	Dec. 31, 2017
Noncurrent assets	68	70
Current assets	4	24
Noncurrent liabilities	–	8
Current liabilities	3	4
Equity	69	82
Share of equity	**38**	**69**
Other	242	162
Carrying amount	**280**	**231**

The item “Other” comprises Bayer’s outstanding capital contribution obligation.

The following table contains a summary of the aggregated income statement data and aggregated carrying amounts of the individually nonmaterial associates accounted for using the equity method.

B 19/6

Earnings Data and Carrying Amounts of Associates Accounted for Using the Equity Method

€ million	2016	2017
Income after income taxes	4	7
Other comprehensive income after income taxes	3	28
Total comprehensive income after income taxes	7	35
Share of income after income taxes	**2**	**1**
Share of total comprehensive income after income taxes	5	29
Carrying amount	**247**	**37**

2016 figures restated

The following table contains a summary of the aggregated income statement data and aggregated carrying amounts of the individually nonmaterial joint ventures that are accounted for using the equity method.

B 19/7

Earnings Data and Carrying Amounts of Joint Ventures Accounted for Using the Equity Method

€ million	2016	2017
Income after income taxes	(6)	(16)
Total comprehensive income after income taxes	(6)	(16)
Share of income after income taxes	**(4)**	**(16)**
Share of total comprehensive income after income taxes	(4)	(16)
Carrying amount	**57**	**112**

2016 figures restated

20. Other financial assets

The other financial assets were comprised as follows:

B 20/1

Other Financial Assets

	Dec. 31, 2016		Dec. 31, 2017	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Loans and receivables	2,140	2,087	1,718	1,501
Available-for-sale financial assets	4,629	3,517	2,728	1,502
of which debt instruments	4,371	3,514	2,463	1,499
of which equity instruments	258	3	265	3
Held-to-maturity financial investments	65	8	57	15
Receivables from derivatives	714	663	647	509
Receivables under lease agreements	8	–	13	2
Total	**7,556**	**6,275**	**5,163**	**3,529**

Loans and receivables included €1,390 million (2016: €1,770 million) in bank deposits and €108 million (2016: €305 million) in commercial paper.

The debt instruments classified as available-for-sale financial assets included capital of €605 million (2016: €612 million) provided to Bayer-Pensionskasse VVaG (Bayer-Pensionskasse) for its effective initial fund, and jouissance right capital (Genussrechtskapital) of €152 million (2016: €154 million), also provided to Bayer-Pensionskasse. Also reported in this category were investments of €1,497 million (2016: €3,513 million) in money market funds.

The equity instruments reported as available-for-sale financial assets included the €101 million (2016: €98 million) investment in CRISPR Therapeutics AG, Switzerland, along with €35 million (2016: €32 million) in instruments whose fair value could not be determined from a stock exchange or other market price or by discounting reliably determinable future cash flows. These equity instruments were recognized at cost.

Further information on the accounting for receivables from derivatives is given in Note [30].

Receivables under lease agreements relate to finance leases where Bayer is the lessor and the economic owner of the leased assets is the lessee. These receivables comprised expected lease payments of €15 million (2016: €39 million), including €2 million (2016: €31 million) in interest. Of the expected lease payments, €3 million (2016: €1 million) is due within one year, €10 million (2016: €2 million) within the following four years and €2 million (2016: €36 million) in subsequent years.

21. Inventories

Inventories were comprised as follows:

B 21/1

Inventories

€ million	Dec. 31, 2016	Dec. 31, 2017
Raw materials and supplies	2,396	1,761
Work in process, finished goods and goods purchased for resale	5,991	4,776
Advance payments	21	13
Total	**8,408**	**6,550**

The deconsolidation of Covestro reduced inventories by €1,831 million.

Impairment losses recognized on inventories were reflected in the cost of goods sold. They were comprised as follows:

B 21/2

Impairments of Inventories

€ million	2016	2017
Accumulated impairment losses, January 1	**(427)**	**(416)**
Divestments / changes in the scope of consolidation	–	13
Impairment losses in the reporting period	(321)	(235)
Impairment loss reversals or utilization	346	261
Exchange differences	(18)	45
Transfers (IFRS 5)	4	1
Accumulated impairment losses, December 31	**(416)**	**(331)**

22. Trade accounts receivable

Trade accounts receivable less impairment losses amounted to €8,582 million (2016: €10,969 million) on the closing date and were comprised as follows:

B 22/1

Trade Accounts Receivable

€ million	2016	2017
Trade accounts receivable (before impairments)	11,377	9,007
Accumulated impairment losses	(408)	(425)
Carrying amount, December 31	**10,969**	**8,582**
of which noncurrent	144	97

The deconsolidation of Covestro reduced trade accounts receivable by €1,943 million.

Changes in impairment losses on trade accounts receivable were as follows:

B 22/2

Impairments of Trade Accounts Receivable

€ million	2016	2017
Accumulated impairment losses, January 1	**(248)**	**(408)**
Divestments / changes in the scope of consolidation	–	41
Impairment losses in the reporting period	(165)	(133)
Impairment loss reversals or utilization	35	29
Exchange differences	(30)	46
Accumulated impairment losses, December 31	**(408)**	**(425)**

Trade accounts receivable amounting to €8,189 million (2016: €10,954 million) were not individually impaired. Of this amount, €1,440 million (2016: €1,161 million) was past due or due immediately on the closing date.

The amounts of impaired and past-due trade accounts receivable are summarized in the following table:

B 22/3

Impaired and Past-Due Trade Accounts Receivable

		Of which neither impaired nor past due at the closing date	Of which unimpaired but past due at the closing date				Of which impaired at the closing date
Carrying amount	**€ million**		**up to 3 months**	**3 – 6 months**	**6 – 12 months**	**more than 12 months**	
December 31, 2017	8,582	6,749	934	142	104	260	393
December 31, 2016	10,969	9,793	780	162	125	94	15

The gross carrying amount of individually impaired trade accounts receivable was €798 million (2016: €192 million). The impairment losses recognized on these assets totaled €405 million (2016: €177 million), resulting in a net carrying amount of €393 million (2016: €15 million).

The unimpaired receivables were deemed to be collectible on the basis of established credit management processes and individual assessments of customer risks. Recognized impairment losses included an appropriate allowance for the default risk as of the end of the reporting period.

Receivables from government health service institutions, especially in Greece, Italy, Portugal and Spain, are under special observation in view of the government debt crisis. Although there were no material defaults on such receivables in 2017 or 2016, it is possible that future developments in these countries could result in payment delays and / or defaults. This could necessitate the recognition of impairment losses due to new occurrences. Trade accounts receivable from government health service institutions in the above countries at the end of 2017 totaled €102 million (2016: €134 million).

An excess-of-loss policy exists for the Pharmaceuticals, Consumer Health and Animal 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 (2016: €150 million). A global excess-of-loss policy has also existed for the Crop Science segment since January 2016. 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 €300 million (2016: €300 million).

A further €696 million (2016: €743 million) of receivables was secured by advance payments, letters of credit or guarantees or by liens on land, buildings or harvest yields.

23. Other receivables

Other receivables were comprised as follows:

B 23/1

Other Receivables

	Dec. 31, 2016		Dec. 31, 2017	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Other tax receivables	764	746	554	541
Deferred charges	549	358	298	192
Reimbursement claims	120	104	85	71
Net defined benefit asset	26	–	36	–
Receivables from employees	50	49	47	46
Miscellaneous receivables	1,284	953	656	426
Total	**2,793**	**2,210**	**1,676**	**1,276**

The reimbursement claims of €85 million (2016: €120 million) predominantly consisted of receivables from insurance companies in connection with product liability claims.

In 2016, miscellaneous receivables included a €441 million receivable from Dow AgroSciences LLC, United States, for damages and royalty payments resulting from the infringement of Bayer's rights to the LibertyLink™ weed control system. This receivable was settled in May 2017.

Other receivables included €426 million (2016: €690 million) in financial receivables. Of this amount, receivables of €383 million (2016: €612 million) were neither impaired nor past due. Receivables of €26 million (2016: €50 million) were due immediately or up to three months past due. Receivables of €17 million (2016: €27 million) were more than three months past due.

Other receivables are stated net of impairment losses of €70 million (2016: €56 million), of which €67 million (2016: €52 million) related to a receivable from the Venezuelan exchange control authority reflecting the right to receive U.S. dollars at a preferential rate.

24. 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 rating agencies commissioned by Bayer assess Bayer's creditworthiness as follows:

B 24/1

Rating

	Long-term rating	Short-term rating
S&P Global Ratings	A-	A-2
Moody's	A3	P-2

These credit ratings reflect the company's high solvency and ensure access to a broad investor base for financing purposes. As a result of the agreed acquisition of Monsanto, both S & P Global Ratings and Moody's are reviewing the possibility of downgrade. Bayer will continue to target an investment-grade rating after the successful closing of the Monsanto acquisition. We remain committed to the single "A" credit rating category over the long term.

Apart from utilizing cash inflows from our operating business to reduce net financial debt, we are implementing our financial strategy by way of vehicles such as the subordinated hybrid bonds issued in July 2014 and April 2015, the mandatory convertible notes issued in November 2016, the authorized and conditional capital, and a potential share buyback program.

The changes in the various components of equity during 2016 and 2017 are shown in the consolidated statements of changes in equity.

Capital stock

The capital stock of Bayer AG on December 31, 2017, amounted to €2,117 million (2016: €2,117 million), divided into 826,947,808 (2016: 826,947,808) registered no-par shares, and was fully paid in. Each no-par share confers one voting right.

Authorized and conditional capital

The authorized and conditional capital was comprised as follows:

B 24/2

Authorized and Conditional Capital

Capital	Resolution	Amount / shares	Expires	Purpose
Authorized capital I	April 29, 2014	€530 million	April 28, 2019	Increase the capital stock by issuing new no-par shares against cash contributions and / or contributions in kind, the latter not to exceed €423 million
Authorized capital II	April 29, 2014	€212 million	April 28, 2019	Increase the capital stock by issuing new no-par shares against cash contributions
Conditional capital	April 29, 2014	€212 million / up to 82,694,750 no-par shares	April 28, 2019	Increase the capital stock by granting no-par shares to the holders of bonds with warrants or convertible notes, profit participation certificates or income bonds; the authorizations to issue such instruments are limited to a total nominal amount of €6 billion.

Capital increases are effected by issuing new registered no-par shares. Stockholders must normally be granted subscription rights. However, subscription rights may be excluded under certain conditions stated in the authorization resolutions. Absent a further resolution of the Annual Stockholders' Meeting on the exclusion of stockholders' subscription rights, the Board of Management may only use the existing authorizations to increase the capital stock out of the authorized capital I and II or the conditional capital – while excluding stockholders' subscription rights – up to a total amount of 20% of the capital stock that existed when the respective resolutions were adopted by the Annual Stockholders' Meeting on April 29, 2014. All

issuances or sales of no-par shares or of bonds with warrants or conversion rights or obligations that are effected while excluding stockholders' subscription rights also count toward this 20% limit. Details of the authorized and conditional capital are provided in the Notice of the Annual Stockholders' Meeting of April 29, 2014, and on the Bayer website. The authorized capital I and the authorized capital II have not been utilized so far.

On November 22, 2016, Bayer placed mandatory convertible notes in the amount of €4,000 million without granting subscription rights to existing stockholders of the company. The notes, denominated in units of €100,000, were issued by Bayer Capital Corporation B.V. under the subordinated guarantee of Bayer AG. At maturity, the outstanding amount of the notes will be mandatorily converted into registered no-par shares of Bayer AG. After deduction of €48 million in transaction costs and recognition of €191 million in deferred taxes, €3,491 million were allocated to capital reserves and €652 million to financial liabilities. The deferred taxes result from temporary differences in accounting for the liability component and were recognized outside profit or loss in equity. As at December 31, 2017, the financial liability had decreased by €125 million, resulting in a €41 million deferred tax reversal through profit or loss. The issuance of the mandatory convertible notes constitutes a utilization of the conditional capital.

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 differences, the changes in fair values of cash flow hedges and available-for-sale financial assets, and the revaluation surplus. In 2017, an amount of €4 million (2016: €4 million) corresponding to the annual amortization/depreciation of the respective assets was transferred from the revaluation surplus to retained earnings.

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 €2.70 per share for 2016. The proposed dividend for the 2017 fiscal year is €2.80 per share, which – based on the current number of shares – would result in a total dividend payment of €2,315 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.

Noncontrolling interest

The changes in noncontrolling interest in equity during 2016 and 2017 are shown in the following table:

B 24/3

Changes in Noncontrolling Interest in Equity

€ million	2016	2017
January 1	**1,180**	**1,564**
Changes in equity not recognized in profit or loss		
Remeasurements of the net liability under defined benefit pension plans	(27)	49
Changes in fair value of cash flow hedges	–	–
Changes in fair value of securities	–	–
Exchange differences on translation of operations outside the eurozone	17	(155)
Other changes in equity	157	(2,025)
Dividend payments	(58)	(131)
Income after income taxes	**295**	**758**
December 31	**1,564**	**60**

Of the dividend payments, €129 million pertained to the noncontrolling interest in the equity of Covestro AG.

The principal subsidiary with third-party noncontrolling interest holders is Bayer CropScience Limited, India. The interest and share of voting rights attributable to noncontrolling interest amounted to 31.3% as at December 31, 2017 (December 31, 2016: 31.4%), and the equity attributable to this noncontrolling interest stood at €52 million (2016: €85 million).

During fiscal 2017, Bayer AG reduced its interest in Covestro AG from 64.2% to 24.6%. In the first quarter, Bayer sold 22 million shares of Covestro AG to institutional investors at a price of €66.50 per share. A further 17.25 million shares of Covestro AG were sold to institutional investors in the second quarter at a price of €62.25 per share. Further, 8 million shares of Covestro AG were deposited in Bayer Pension Trust e. V. at a price of €63.04 per share. In the third quarter of 2017, Bayer AG sold shares 19 million shares in Covestro AG at a price of €63.25 per share on September 12, 2017, and approximately 14 million Covestro AG shares at a price of €71.72 on September 29, 2017. The buyers of the around 14 million shares sold on September 29, 2017 agreed to be bound by a lock-up arrangement pursuant to which they would not sell the shares they purchased until at least December 11, 2017. Under the contractual agreement, Bayer retained the economic exposure to the price of these shares at least until that date.

The reductions in Bayer's interest through September 12, 2017, detailed above had a €4.2 billion positive effect on Bayer Group equity, which was recognized in other changes in equity. Of this amount, €2.7 billion was attributable to stockholders of Bayer AG and €1.5 billion to noncontrolling interest. As part of the deconsolidation at the end of September 2017, the noncontrolling interest in Covestro AG equity was derecognized in its entirety. See Note [6.3] for details on the deconsolidation of Covestro.

As of December 31, 2017, Bayer held 24.6% of the shares of Covestro AG. Bayer Pension Trust e.V. held a further 8.9%.

25. 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 25/1

Net Defined Benefit Liability Reflected in the Statement of Financial Position

	Pensions		Other post-employment benefits		Total	
€ million	Dec. 31, 2016	Dec. 31, 2017	Dec. 31, 2016	Dec. 31, 2017	Dec. 31, 2016	Dec. 31, 2017
Provisions for pensions and other post-employment benefits (net liability)	**10,736**	**7,798**	**398**	**222**	**11,134**	**8,020**
of which Germany	9,176	6,778	–	–	9,176	6,778
of which other countries	1,560	1,020	398	222	1,958	1,242
Net defined benefit asset	**25**	**36**	**1**	**–**	**26**	**36**
of which Germany	23	22	–	–	23	22
of which other countries	2	14	1	–	3	14
Net defined benefit liability	**10,711**	**7,762**	**397**	**222**	**11,108**	**7,984**
of which Germany	9,153	6,756	–	–	9,153	6,756
of which other countries	1,558	1,006	397	222	1,955	1,228

The deconsolidation of Covestro reduced provisions for pensions and other post-employment benefits by €1,201 million.

The expenses for defined benefit plans for pensions and other post-employment benefits comprised the following components:

B 25/2

Expenses for Defined Benefit Plans

	Pension plans						Other post-employment benefit plans	
	Germany		Other countries		Total		Other countries	
€ million	2016	2017	2016	2017	2016	2017	2016	2017
Current service cost	281	312	86	93	367	405	14	13
Past service cost	17	20	(4)	(3)	13	17	(1)	(2)
of which plan curtailments	–	–	1	(2)	1	(2)	–	(2)
Plan settlements	–	–	(8)	8	(8)	8	–	–
Plan administration cost paid out of plan assets	3	3	1	1	4	4	–	–
Net interest	175	135	46	43	221	178	14	13
Total	**476**	**470**	**121**	**142**	**597**	**612**	**27**	**24**

2016 figures restated

In addition, a total of €1,236 million in effects of remeasurements of the net defined benefit liability was recognized in 2017 outside profit or loss (2016: minus €1,036 million). Of this amount, €1,223 million (2016: minus €1,063 million) related to pension obligations, €1 million (2016: €34 million) to other post-employment benefit obligations, and €12 million (2016: minus €7 million) to the effects of the asset ceiling.

The net defined benefit liability developed as follows:

B 25/3

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, 2017	**(20,962)**	**11,809**	–	**(9,153)**
Acquisitions	–	–	–	–
Divestments / changes in the scope of consolidation	3,021	(2,075)	–	946
Current service cost	(368)			(368)
Past service cost	(32)			(32)
Net interest	(358)	208	–	(150)
Net actuarial gain / (loss)	206			206
of which due to changes in financial assumptions	180			180
of which due to changes in demographic assumptions	(1)			(1)
of which due to experience adjustments	27			27
Return on plan assets excluding amounts recognized as interest income		755		755
Employer contributions		593		593
Employee contributions	(39)	39		–
Payments due to plan settlements	–	–		–
Benefits paid out of plan assets	216	(216)		–
Benefits paid by the company	441			441
Plan administration cost paid from plan assets		(3)		(3)
Reclassification to current assets / liabilities held for sale	38	(29)		9
December 31, 2017	**(17,837)**	**11,081**	–	**(6,756)**
Other countries				
January 1, 2017	**(8,033)**	**6,127**	**(49)**	**(1,955)**
Acquisitions	–	–	–	–
Divestments / changes in the scope of consolidation	840	(589)	3	254
Current service cost	(109)			(109)
Past service cost	8			8
Gains / (losses) from plan settlements	(8)			(8)
Net interest	(244)	183	(3)	(64)
Net actuarial gain / (loss)	(166)			(166)
of which due to changes in financial assumptions	(191)			(191)
of which due to changes in demographic assumptions	21			21
of which due to experience adjustments	4			4
Return on plan assets excluding amounts recognized as interest income		429		429
Remeasurement of asset ceiling			12	12
Employer contributions		125		125
Employee contributions	(14)	14		–
Payments due to plan settlements	32	(41)		(9)
Benefits paid out of plan assets	300	(300)		–
Benefits paid by the company	94			94
Plan administration costs paid out of plan assets		(1)		(1)
Reclassification to current assets / liabilities held for sale	10	(8)	–	2
Exchange differences	635	(481)	6	160
December 31, 2017	**(6,655)**	**5,458**	**(31)**	**(1,228)**
of which other post-employment benefits	(671)	449	–	(222)
Total, December 31, 2017	**(24,492)**	**16,539**	**(31)**	**(7,984)**

Covestro is included in the net defined benefit liability.

B 25/4

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, 2016	**(19,148)**	**10,199**	**–**	**(8,949)**
Acquisitions	**–**	**–**	**–**	**–**
Divestments / changes in the scope of consolidation	4	(2)	**–**	2
Current service cost	(350)			(350)
Past service cost	(26)			(26)
Net interest	(452)	248	**–**	(204)
Net actuarial gain / (loss)	(1,610)			(1,610)
of which due to changes in financial assumptions	(1,563)			(1,563)
of which due to changes in demographic assumptions	(1)			(1)
of which due to experience adjustments	(46)			(46)
Return on plan assets excluding amounts recognized as interest income		669		669
Employer contributions		878		878
Employee contributions	(39)	39		**–**
Payments due to plan settlements	–	–		**–**
Benefits paid out of plan assets	219	(219)		**–**
Benefits paid by the company	440			440
Plan administration cost paid from plan assets		(3)		(3)
Reclassification to current assets / liabilities held for sale	**–**	**–**		**–**
December 31, 2016	**(20,962)**	**11,809**	**–**	**(9,153)**
Other countries				
January 1, 2016	**(7,660)**	**5,799**	**(32)**	**(1,893)**
Acquisitions	**–**	1	**–**	1
Divestments / changes in the scope of consolidation	4	(3)	**–**	1
Current service cost	(118)			(118)
Past service cost	6			6
Gains / (losses) from plan settlements	9			9
Net interest	(284)	215	(3)	(72)
Net actuarial gain / (loss)	(515)			(515)
of which due to changes in financial assumptions	(650)			(650)
of which due to changes in demographic assumptions	89			89
of which due to experience adjustments	46			46
Return on plan assets excluding amounts recognized as interest income		427		427
Remeasurement of asset ceiling			(7)	(7)
Employer contributions		152		152
Employee contributions	(12)	12		**–**
Payments due to plan settlements	83	(84)		(1)
Benefits paid out of plan assets	295	(295)		**–**
Benefits paid by the company	87			87
Plan administration costs paid out of plan assets		(1)		(1)
Reclassification to current assets / liabilities held for sale	**–**	**–**	**–**	**–**
Exchange differences	72	(96)	(7)	(31)
December 31, 2016	**(8,033)**	**6,127**	**(49)**	**(1,955)**
of which other post-employment benefits	(867)	471	–	(396)
Total, December 31, 2016	**(28,995)**	**17,936**	**(49)**	**(11,108)**

Covestro is included in the net defined benefit liability.

The benefit obligations pertained mainly to Germany (73%; 2016: 72%), the United States (12%; 2016: 14%) and the United Kingdom (8%; 2016: 7%). In Germany, current employees accounted for about 43% (2016: 46%), retirees or their surviving dependents for about 50% (2016: 47%) and former employees with vested pension rights for about 7% (2016: 7%) of entitlements under defined benefit plans. In the

United States, current employees accounted for about 21% (2016: 25%), retirees or their surviving dependents for about 65% (2016: 53%) and former employees with vested pension rights for about 14% (2016: 22%) of entitlements under defined benefit plans.

The actual return on the assets of defined benefit plans for pensions or other post-employment benefits amounted to €1,517 million (2016: €1,519 million) and €58 million (2016: €40 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 25/5

Defined Benefit Obligation and Funded Status

	Pension obligation		Other post-employment benefit obligation		Total	
€ million	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Defined benefit obligation	**28,128**	**23,821**	**867**	**671**	**28,995**	**24,492**
of which unfunded	1,231	1,117	125	64	1,356	1,181
of which funded	26,897	22,704	742	607	27,639	23,311
Funded status of funded obligations						
Overfunding	74	67	1	–	75	67
Underfunding	9,506	6,681	272	158	9,778	6,839

Pension and other post-employment benefit obligations

Group companies provide retirement benefits for most of their employees, either directly or by contributing to privately or publicly administered funds. The benefits vary depending on the legal, fiscal and economic conditions of each country. The obligations relate both to existing retirees' pensions and to pension entitlements of future retirees.

Bayer has set up funded pension plans for its employees in various countries. The most appropriate investment strategy is determined for each defined benefit pension plan based on the risk structure of the obligations (especially demographics, the current funded status, the structure of the expected future cash flows, interest sensitivity, biometric risks etc.), the regulatory environment and the existing level of risk tolerance or risk capacity. A strategic target investment portfolio is then developed in line with the plan's risk structure, taking capital market factors into consideration. Further determinants are risk diversification, portfolio efficiency and the need for both a country-specific and a global risk / return profile centered on ensuring the payment of all future benefits. As the capital investment strategy for each pension plan is developed individually in light of the plan-specific conditions listed above, the investment strategies for different pension plans may vary considerably. The investment strategies are generally aligned less toward maximizing absolute returns and more toward the maximum probability of being able to finance pension commitments over the long term. For pension plans, stress scenarios are simulated and other risk analyses (such as value at risk) undertaken with the aid of risk management systems.

Bayer-Pensionskasse VVaG (Bayer-Pensionskasse), Leverkusen, Germany, is by far the most significant of the pension plans. It has been closed to new members since 2005. This legally independent fund is regarded as a life insurance company and therefore is subject to the German Insurance Supervision Act. The benefit obligations covered by Bayer-Pensionskasse comprise retirement, surviving dependents' and disability pensions. It constitutes a multi-employer plan, to which the active members and their employers contribute. The company contribution is a certain percentage of the employee contribution. This percentage is the same for all participating employers, including those outside the Bayer Group, and is set by agreement between the plan's executive committee and its supervisory board, acting on a proposal from the responsible actuary. It takes into account the differences between the actuarial estimates and the actual values for the factors used to determine liabilities and contributions. Bayer may also adjust the company contribution in agreement with the plan's executive committee and its supervisory board, acting on a proposal from the responsible actuary. The plan's liability is governed by Section 1, Paragraph 1, Sentence

3 of the German Law on the Improvement of Occupational Pensions. This means that if the pension plan exercises its right under the articles of association to reduce benefits, each participating employer has to make up the resulting difference. Bayer is not liable for the obligations of participating employers outside the Bayer Group, even if they cease to participate in the plan.

Pension entitlements for people who joined Bayer in Germany in 2005 or later are granted via Rheinische Pensionskasse VVaG, Leverkusen. Future pension payments from this plan are based on contributions and the return on plan assets; a guaranteed interest rate applies.

Another important pension provision vehicle is Bayer Pension Trust e. V. (BPT). This covers further retirement provision arrangements of the Bayer Group, such as deferred compensation, pension obligations previously administered by Schering Altersversorgung Treuhand e. V., and components of other direct commitments.

The defined benefit pension plans in the United States have been frozen for some years, and no significant new entitlements can be earned under these plans. The assets of all the U.S. pension plans are held by a master trust for reasons of efficiency. The applicable regulatory framework is based on the Employee Retirement Income Security Act (ERISA), which includes a statutory 80% minimum funding requirement to avoid benefit restrictions. The actuarial risks, such as investment risk, interest-rate risk and longevity risk, remain with the company.

The defined benefit pension plans in the United Kingdom have been closed to new members for some years. Plan assets in the U.K. are administered by independent trustees, who are legally obligated to act solely in the interests of the beneficiaries. A technical assessment is performed every three years in line with U.K. regulations. This serves as the basis for developing a plan to cover any potential financing requirements. Here, too, the actuarial risks remain with the company.

The other post-employment benefit obligations outside Germany mainly comprised health care benefit payments for retirees in the United States.

The fair value of the plan assets to cover pension and other post-employment benefit obligations was as follows:

B 25/6

Fair Value of Plan Assets as of December 31

	Pension obligations				Other post-employment obligations	
	Germany		Other countries		Other countries	
€ million	2016	2017	2016	2017	2016	2017
Plan assets based on quoted prices in active markets						
Real estate and special real estate funds	–	–	215	181	22	16
Equities and equity funds	2,919	3,617	1,861	1,739	149	158
Callable debt instruments	–	–	263	27	–	–
Noncallable debt instruments	556	–	736	602	128	127
Bond funds	3,754	3,737	1,823	1,631	104	94
Derivatives	11	11	(3)	–	–	–
Cash and cash equivalents	243	164	114	74	17	13
Other	–	–	6	–	–	–
	7,483	**7,529**	**5,015**	**4,254**	**420**	**408**
Plan assets for which quoted prices in active markets are not available						
Real estate and special real estate funds	563	496	124	179	–	–
Equities and equity funds	115	121	72	71	–	–
Callable debt instruments	1,525	1,399	–	–	–	–
Noncallable debt instruments	1,870	1,394	–	–	–	–
Bond funds	–	–	72	74	–	–
Derivatives	1	–	–	–	–	–
Other	252	142	373	431	51	41
	4,326	**3,552**	**641**	**755**	**51**	**41**
Total plan assets	**11,809**	**11,081**	**5,656**	**5,009**	**471**	**449**

The fair value of plan assets in Germany included real estate leased by Group companies, recognized at a fair value of €82 million (2016: €82 million), and Bayer AG shares and bonds held through investment funds, recognized at their fair values of €37 million (2016: €41 million) and €3 million (2016: €3 million), respectively.

In 2017, Bayer AG deposited 8 million (2016: 10 million) shares it held in Covestro AG with BPT. The market value of BPT's total shareholding in Covestro AG amounted to €1,549 million as of December 31, 2017 (2016: €652 million). In 2016, Covestro deposited short-term securities totaling €450 million with Metzler Trust e. V.

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, 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 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 25/7

Parameters for Benefit Obligations

	Germany		Other countries		Total	
%	2016	2017	2016	2017	2016	2017
Pension obligations						
Discount rate	1.80	1.90	3.25	2.95	2.15	2.15
of which U.S.A			3.70	3.40	3.70	3.40
of which U.K.			2.65	2.50	2.65	2.50
Projected future salary increases	2.75	2.75	3.50	3.60	2.95	2.95
Projected future benefit increases	1.50	1.70	3.35	3.25	1.95	2.10
Other post-employment benefit obligations						
Discount rate	–	–	4.35	4.25	4.35	4.25

The data selection criteria used to determine the discount rate in the eurozone were modified starting in the third quarter of 2017 in connection with the deconsolidation of Covestro. As before, the underlying bond portfolio consists entirely of high-quality corporate bonds with a minimum AA or AAA rating. It no longer contains corporate bonds issued by government-owned entities. The bond portfolio includes corporate bonds of special-purpose entities and exchange-traded corporate bonds. Without these modifications, the interest rate as of December 31, 2017, would have been 20 basis points lower. Provisions for pensions would therefore have been €0.6 billion higher.

In Germany the Heubeck 2005 G mortality tables were used, in the United States the RP-2014 Mortality Tables, and in the United Kingdom 95% of S1NXA.

The following weighted parameters were used to measure the expense for pension and other post-employment benefits in the respective year:

B 25/8

Parameters for Benefit Expense

	Germany		Other countries		Total	
%	**2016**	**2017**	**2016**	**2017**	**2016**	**2017**
Pension obligations						
Discount rate	2.40	1.80	3.85	3.25	2.75	2.15
Projected future salary increases	3.00	2.75	3.35	3.50	3.10	2.95
Projected future benefit increases	1.75	1.50	3.20	3.35	2.15	1.95
Other post-employment benefit obligations						
Discount rate	–	–	4.45	4.35	4.45	4.35

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 25/3. Altering individual parameters by 0.5 percentage points (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 2017 as follows:

B 25/9

Sensitivity of Benefit Obligations

	Germany		Other countries		Total	
€ million	**Increase**	**Decrease**	**Increase**	**Decrease**	**Increase**	**Decrease**
Pension obligations						
0.5%-pt. change in discount rate	(1,417)	1,620	(414)	468	(1,831)	2,088
0.5%-pt. change in projected future salary increases	87	(82)	50	(47)	137	(129)
0.5%-pt. change in projected future benefit increases	921	(841)	146	(110)	1,067	(951)
10% change in mortality	(587)	660	(172)	176	(759)	836
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(36)	39	(36)	39
10% change in mortality	–	–	(20)	22	(20)	22

B 25/10

Sensitivity of Benefit Obligations (prior year)

	Germany		Other countries		Total	
€ million	**Increase**	**Decrease**	**Increase**	**Decrease**	**Increase**	**Decrease**
Pension obligations						
0.5%-pt. change in discount rate	(1,752)	2,014	(478)	539	(2,230)	2,553
0.5%-pt. change in projected future salary increases	135	(125)	50	(47)	185	(172)
0.5%-pt. change in projected future benefit increases	1,107	(1,009)	139	(94)	1,246	(1,103)
10% change in mortality	(670)	752	(195)	209	(865)	961
Other post-employment benefit obligations						
0.5%-pt. change in discount rate	–	–	(48)	53	(48)	53
10% change in mortality	–	–	(24)	27	(24)	27

Provisions are also set up for the obligations, mainly of U.S. subsidiaries, to provide post-employment benefits in the form of health care cost payments for retirees. The valuation of health care costs was based on the assumption that they will increase at a rate of 6.5% (2016: 6.8%), which should gradually decline to 5.0% by 2023 (assumption in 2016: gradually decline to 5.0% by 2023). 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 25/11

Sensitivity to Health Care Cost Increases

	Increase of one percentage point		Decrease of one percentage point	
€ million	**2016**	**2017**	**2016**	**2017**
Impact on other post-employment benefit obligations	77	55	(66)	(47)
Impact on benefit expense	4	3	(3)	(3)

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 25/12

Employer Contributions Paid or Expected

	Germany			Other countries		
€ million	**2016**	**2017**	**2018 expected**	**2016**	**2017**	**2018 expected**
Pension obligations	878	593	42	151	146	104
Other post-employment benefit obligations	–	–	–	1	(21)	1
Total	**878**	**593**	**42**	**152**	**125**	**105**

Bayer has currently committed to make deficit contributions for its U.K. pension plans of approximately GBP 16 million annually through 2019. For its U.S. pension plans, Bayer made payments of US$50 million in 2017 and expects to make payments of US$50 million in 2018, the latter amount being subject to change depending on future circumstances.

Pensions and other post-employment benefits payable in the future from funded and unfunded plans are estimated as follows:

B 25/13

Future Benefit Payments

	Payments out of plan assets				Payments by the company			
	Pensions		Other post-employment benefits		Pensions		Other post-employment benefits	
€ million	**Germany**	**Other countries**	**Other countries**	**Total**	**Germany**	**Other countries**	**Other countries**	**Total**
2018	203	247	22	472	434	69	14	517
2019	205	247	23	475	439	66	16	521
2020	208	251	23	482	443	70	17	530
2021	211	259	24	494	449	77	18	544
2022	216	261	25	502	454	78	18	550
2023-2027	1,135	1,363	128	2,626	2,311	415	110	2,836

The weighted average term of the pension obligations is 17.0 years (2016: 18.0 years) in Germany and 13.8 years (2016: 13.3 years) in other countries. The weighted average term of the obligations for other post-employment benefits in other countries is 11.5 years (2016: 11.5 years).

26. Other provisions

Changes in the various provision categories in 2017 were as follows:

B 26/1

Changes in Other Provisions

€ million	Other Taxes	Environmental protection	Restructuring	Trade-related commitments	Litigations	Personnel commitments	Miscellaneous	Total
December 31, 2016	**41**	**321**	**276**	**2,375**	**512**	**3,290**	**386**	**7,201**
Divestments / changes in the scope of consolidation	(6)	(44)	(56)	(88)	(7)	(552)	(25)	(778)
Additions	19	34	103	5,440	172	2,706	332	8,806
Utilization	(18)	(32)	(101)	(4,423)	(199)	(2,720)	(255)	(7,748)
Reversal	(5)	(14)	(37)	(567)	(47)	(589)	(61)	(1,320)
Reclassification to current liabilities	–	–	–	(11)	–	(2)	–	(13)
Interest cost	–	(2)	–	–	–	7	–	5
Exchange differences	(2)	(20)	(14)	(245)	(38)	(102)	(22)	(443)
December 31, 2017	**29**	**243**	**171**	**2,481**	**393**	**2,038**	**355**	**5,710**

The provisions recognized in the statement of financial position as of December 31, 2017, were expected to be utilized as follows:

B 26/2

Expected Utilization of Other Provisions

€ million	Other Taxes	Environmental protection	Restructuring	Trade-related commitments	Litigations	Personnel commitments	Miscellaneous	Total
2018	12	69	109	2,313	258	1,334	249	4,344
2019	–	13	29	147	65	59	3	316
2020	–	8	11	9	2	187	2	219
2021	–	7	6	2	3	159	1	178
2022	–	2	4	2	6	40	5	59
2023 or later	17	144	12	8	59	259	95	594
Total	**29**	**243**	**171**	**2,481**	**393**	**2,038**	**355**	**5,710**

The provisions were partly offset by claims for refunds in the amount of €74 million (2016: €110 million), which were recognized as receivables. These claims predominantly related to product liability.

Restructuring

Provisions for restructuring included €116 million (2016: €179 million) for severance payments and €55 million (2016: €97 million) for other restructuring expenses, which mainly comprised other costs related to the closure of production facilities.

In the Pharmaceuticals segment, restructuring took place mainly in the areas of marketing and supply network optimization as part of the Continuous Efficiency Program. In 2017, further use was made of the restructuring provisions established for this program in previous years, primarily in Japan, France and the United States. Provisions for the above and other restructuring measures in Pharmaceuticals as of December 31, 2017, totaled €45 million. Of this amount, severance payments accounted for €44 million and other restructuring expenses for €1 million.

In the Consumer Health segment, restructuring took place mainly in France, Germany and Italy. The restructuring measures in France and in Italy related to distribution, and in Germany to the discontinuation of contract manufacturing of medical products for third parties. Provisions for restructuring in this segment totaled €33 million as of December 31, 2017, with severance payments accounting for the entire amount.

In the Crop Science segment, provisions were established for the planned restructuring of the site in Institute, West Virginia, United States, to prepare for the termination of thiodicarb production. The restructuring measures initiated in connection with the "Advancing our Leadership Strategy" program to improve customer centricity, innovation and efficiency continued to be implemented. Restructuring provisions for the above and other measures at Crop Science as of December 31, 2017, totaled €73 million. Of this amount, severance payments accounted for €21 million and other restructuring expenses for €52 million.

Provisions for restructuring in the Animal Health segment as of December 31, 2017, totaled €6 million. Of this amount, severance payments accounted for €5 million and other restructuring expenses for €1 million.

In "All Other Segments," provisions were established for the relocation of a shared service center in China from Shanghai to Dalian. In addition, the provisions established in past years were utilized to implement planned restructuring measures to enhance efficiency. The restructuring provisions totaled €14 million as of December 31, 2017. Of this amount, severance payments accounted for €13 million and other restructuring expenses for €1 million.

Litigations

The legal risks currently considered to be material, and their development, are described in Note [32].

Personnel commitments

Stock-based compensation programs

Bayer offers stock-based compensation programs collectively to different groups of employees. As required by IFRS 2 (Share-based Payment) for compensation systems involving cash settlement, awards to be made under the stock-based programs are covered by provisions in the amount of the fair value of the obligations existing as of the date of the financial statements vis-à-vis the respective employee group. All resulting valuation adjustments are recognized in profit or loss.

The following table shows the changes in provisions for the various programs:

B 26/3

Changes in Provisions for Stock-Based Compensation Programs

€ million	Aspire I	Aspire II	Aspire 2.0	Aspire I Covestro	Aspire II Covestro	Covestro Prisma	Total
December 31, 2016	**61**	**203**	**85**	**17**	**48**	**15**	**429**
Acquisitions / divestments	–	–	–	(7)	(22)	(27)	(56)
Additions	54	163	292	2	5	15	531
Utilization	(51)	(157)	–	(8)	(27)	–	(243)
Reversal	(56)	(167)	(98)	(3)	(3)	(1)	(328)
Exchange differences	(2)	(7)	(16)	(1)	(1)	(2)	(29)
December 31, 2017	**6**	**35**	**263**	**–**	**–**	**–**	**304**

The value of the Aspire tranches that were fully earned at the end of 2017, resulting in payments at the beginning of 2018, was €34 million (2016: €241 million).

The net expense for all stock-based compensation programs (excluding Covestro) was €194 million (2016: €87 million), including €5 million (2016: €5 million) for the BayShare stock participation program and expense of €1 million (2016: €1 million income) for grants of virtual Bayer shares.

The fair value of the obligations under the Aspire I, Aspire II and Aspire 2.0 programs (excluding Aspire programs for Covestro) was calculated using the Monte Carlo simulation method based on the following key parameters:

B 26/4

Parameters for Monte Carlo Simulation

	2016	2017
Dividend yield	2.90%	2.46%
Risk-free interest rate	(0.67)%	(0.35)%
Volatility of Bayer stock	22.78%	15.49%
Volatility of EURO STOXX 50	11.66%	9.27%
Correlation between Bayer stock price and the EURO STOXX 50	0.67	0.71

Long-term incentive program for members of the Board of Management and other senior executives (Aspire I)

From 2005 through 2015, members of the Board of Management and other senior executives were entitled to participate in Aspire I on the condition that they purchased a certain number of Bayer shares – determined for each individual according to specific guidelines – and retained them for the full term of the program. A percentage of the executive's annual base salary – according to his or her position – was defined as a target for variable payments (Aspire target opportunity). Depending on the performance of Bayer stock, both in absolute terms and relative to the EURO STOXX 50 index over a four-year performance period, participants receive a payment of up to 300% of their individual Aspire target opportunity at the end of the period. The prices used to determine the amount of the payment are the averages of the official closing prices of Bayer shares over the last 30 stock-exchange trading days of the respective year. At the start of 2017, a payment of 270% was made for the tranche issued in 2013. A payment of 20% was made at the start of 2018 for the tranche issued in 2014.

Long-term incentive program for middle management (Aspire II)

From 2005 through 2015, other senior managers were offered Aspire II, which was similar to Aspire I but did not require a personal investment in Bayer shares. The amount of the payment is based entirely on the absolute performance of Bayer stock over a four-year period. The maximum payment is 250% of each manager's Aspire target opportunity. The prices used to determine the amount of the payment are the averages of the official closing prices of Bayer shares over the last 30 stock-exchange trading days of the respective year. At the start of 2017, a payment of 220% was made for the tranche issued in 2013. A payment of 40% was made at the start of 2018 for the tranche issued in 2014.

Long-term incentive program Aspire 2.0

Since 2016, Aspire has been offered to all eligible employees in a new, standardized format named Aspire 2.0. For the Board of Management, there is an additional hurdle in the form of a comparison between the performance of Bayer stock and that of the EURO STOXX 50. Each tranche runs for four years. Aspire 2.0 is also based on a percentage of each employee's annual base salary, the percentage varying according to his or her position. This target value is multiplied by the employee's STI payment factor for the previous year to give the Aspire grant value. The STI payment factor reflects the employee's individual performance and the business performance under the global short-term incentive program (STI). 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. 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.

BayShare 2017

All management levels and nonmanagerial employees are offered an annual stock participation program known as BayShare, under which Bayer subsidizes their personal investments in the company's stock. The discount under this program in 2017 was 20% (2016: 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 (2016: €2,500) or €5,000 (2016: €5,000), depending on the employee's position. These shares must be retained until December 31, 2018.

In 2017, employees purchased a total of about 229,000 shares (2016: 259,000 shares) under the BayShare program.

27. Financial liabilities

Financial liabilities were comprised as follows:

B 27/1

Financial Liabilities

	Dec. 31, 2016		Dec. 31, 2017	
€ million	**Total**	**Of which current**	**Total**	**Of which current**
Bonds and notes / promissory notes	15,991	2,010	12,436	505
Liabilities to banks	1,837	820	534	513
Liabilities under finance leases	436	59	238	32
Liabilities from derivatives	587	309	240	221
Other financial liabilities	730	203	970	664
Total	**19,581**	**3,401**	**14,418**	**1,935**

The development of financial liabilities in 2017 is outlined in Note [35].

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

B 27/2

Maturities of Financial Liabilities

€ million	Dec. 31, 2016	€ million	Dec. 31, 2017
2017	3,401	2018	1,935
2018	3,241	2019	2,155
2019	2,456	2020	1,248
2020	44	2021	2,096
2021	2,714	2022	89
2022 or later	7,725	2023 or later	6,895
Total	**19,581**	**Total**	**14,418**

In addition to promissory notes in the amount of €45 million (2016: €45 million), the Bayer Group has issued the following bonds and notes:

B 27/3

Bonds and Notes

Effective interest rate	Stated rate		Nominal volume	Dec. 31, 2016 € million	Dec. 31, 2017 € million
		Bayer AG, Germany			
1.253%	1.125%	DIP bond 2014/2018[3]	EUR 750 million	749	–
5.774%	5.625%	DIP bond 2006/2018	GBP 250 million	292	281
5.541%	5.625%	DIP bond 2006/2018 (increase)	GBP 100 million	117	113
0.050%	0.050%	Exchangeable bond[4] 2017/2020	EUR 1,000 million	–	1,220
2.086%	1.875%	DIP bond 2014/2021	EUR 750 million	755	753
3.811%	3.750%	Hybrid bond 2014/2024[5]/2074	EUR 1,500 million	1,494	1,495
2.517%	2.375%	Hybrid bond 2015/2022[5]/2075	EUR 1,300 million	1,290	1,292
3.093%	3.000%	Hybrid bond 2014/2020[5]/2075	EUR 1,750 million	1,745	1,746
		Bayer Capital Corporation B.V., Netherlands			
1.333%	1.250%	DIP bond 2014/2023	EUR 500 million	497	498
6.061%	5.625%	Mandatory convertible notes[6] 2016/2019	EUR 4,000 million	–	–
		Bayer Corporation, U.S.A.			
6.670%	6.650%	Notes 1998/2028	US$ 350 million	351	307
		Bayer Holding Ltd., Japan			
0.858%	0.816%	DIP bond 2012/2017	JPY 30 billion	243	–
1.493%	1.459%	DIP bond 2010/2017	JPY 10 billion	81	–
3.654%	3.575%	DIP bond 2008/2018	JPY 15 billion	122	111
0.629%	0.594%	DIP bond 2013/2019	JPY 10 billion	81	74
0.270%	0.230%	DIP bond 2017/2021	JPY 10 billion	–	74
0.301%	0.260%	DIP bond 2017/2022	JPY 10 billion	–	74
		Bayer Nordic SE, Finland			
Floating[1]	Floating[1]	DIP bond 2014/2017	EUR 500 million	500	–
		Bayer U.S. Finance LLC, U.S.A.			
Floating[2]	Floating[2]	Notes 2014/2017	US$ 400 million	379	–
1.615%	1.500%	Notes 2014/2017	US$ 850 million	806	–
2.564%	2.375%	Notes 2014/2019	US$ 2,000 million	1,889	1,662
3.096%	3.000%	Notes 2014/2021	US$ 1,500 million	1,419	1,247
3.579%	3.375%	Notes 2014/2024	US$ 1,750 million	1,642	1,444
		Covestro AG, Germany			
Floating	Floating	DIP bond 2016/2018	EUR 500 million	500	–
1.076%	1.000%	DIP bond 2016/2021	EUR 500 million	497	–
1.782%	1.750%	DIP bond 2016/2024	EUR 500 million	497	–
		Total		**15,946**	**12,391**

[1] Floating-rate coupon comprising three-month EURIBOR plus 22 basis points
[2] Floating-rate coupon comprising three-month USD-LIBOR plus 28 basis points
[3] Bond was early redeemed in October 2017
[4] Bond can be redeemed in cash, Covestro shares or a combinaton thereof
[5] Date of first option to early redeem the bond at par
[6] The mandatory convertible notes were allocated to capital reserves and to other financial liabilities.

Debt Issuance Programme

An important means of external financing are the bonds issued under the Debt Issuance Programme (DIP).

Bayer Holding Ltd., Japan, issued two JPY 10 billion bonds under the DIP in May 2017.

Hybrid bonds

The hybrid bonds issued by Bayer AG are subordinated, and 50% of their amount is treated by Moody's and S & P Global Ratings as equity. They therefore have a more limited effect on the Group's rating-relevant debt indicators than senior borrowings.

Mandatory convertible notes

On November 22, 2016, Bayer Capital Corporation B.V. placed subordinated mandatory convertible notes in the amount of €4,000 million, which will be converted into no-par shares of Bayer AG at maturity. The notes represented the first part of the equity component of the financing for the planned acquisition of Monsanto. The mandatory convertible notes were recognized in capital reserves and other financial liabilities.

Exchangeable bond

On June 14, 2017, Bayer AG issued bonds with a nominal value of €1,000 million which mature in 2020. The issue price was 105.25 percent of the principal amount and the initial exchange price was fixed at €80.93. These bonds can be settled in cash, by delivery of Covestro shares or by a combination thereof at or prior to maturity. Applying the fair value option under IAS 39.11A, these debt instruments were designated as financial liabilities at fair value through profit or loss upon first-time recognition.

Bayer AG guarantees all the bonds issued by subsidiaries.

Lease liabilities

Lease payments totaling €365 million (2016: €609 million), including €127 million (2016: €173 million) in interest, are to be made under finance leases to the respective lessors in future years.

The liabilities under finance leases mature as follows:

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Lease Liabilities

€ million	Dec. 31, 2016		
Maturity	Lease payments	Interest component	Liabilities under finance leases
2017	88	29	59
2018	76	24	52
2019	68	21	47
2020	59	17	42
2021	57	15	42
2022 or later	261	67	194
Total	**609**	**173**	**436**

€ million	Dec. 31, 2017		
Maturity	Lease payments	Interest component	Liabilities under finance leases
2018	49	17	32
2019	44	13	31
2020	39	12	27
2021	31	11	20
2022	25	10	15
2023 or later	177	64	113
Total	**365**	**127**	**238**

Other financial liabilities

Other financial liabilities as of December 31, 2017, comprised €525 million (2016: €652 million) relating to the mandatory convertible notes issued in November 2016, and €292 million (2016: €0 million) in commercial paper.

Other information

As of December 31, 2017, the Group had undrawn credit facilities at its disposal totaling €47 billion (2016: €55 billion), including €43 billion, or US$52 billion (2016: €50 billion, or US$53 billion), in bridge financing for the planned acquisition of Monsanto.

Further information on the accounting for liabilities from derivatives is given in Note [30].

28. Trade accounts payable

Trade accounts payable comprised €5,116 million (2016: €6,403 million) due within one year and €13 million (2016: €7 million) due after one year. As a result of the deconsolidation of Covestro, trade accounts payable decreased by €1,286 million.

29. Other liabilities

Other liabilities comprised:

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Other Liabilities

	Dec. 31, 2016		Dec. 31, 2017	
€ million	Total	Of which current	Total	Of which current
Other tax liabilities	544	527	420	418
Deferred income	1,463	651	1,156	195
Liabilities to employees	229	219	181	164
Liabilities for social expenses	168	157	138	130
Accrued interest on liabilities	186	181	149	139
Miscellaneous liabilities	788	686	724	606
Total	**3,378**	**2,421**	**2,768**	**1,652**

Deferred income included an upfront payment, originally amounting to US$1 billion, in connection with the strategic pharmaceutical collaboration agreed between Bayer and Merck & Co., Inc., United States, in the field of soluble guanylate cyclase (sGC) modulation. This deferred income is being amortized over a period of 13.5 years as the obligations are satisfied. At the end of 2017, the remaining amount of deferred income was €601 million (2016: €660 million). In addition, a milestone achieved in 2017 in the course of the collaboration led to the recognition of €291 million in deferred income at year end.

Deferred income also included the proceeds from the sale of the Diabetes Care business at the beginning of 2016. As at December 31, 2016, the amount deferred was €469 million. The original proceeds of around €1 billion were accrued over a period of 24 months in line with the rendering of the services and were fully realized by the end of 2017.

The deferred income included €48 million (2016: €62 million) in grants and subsidies received from governments, of which €17 million (2016: €15 million) was reversed through profit or loss.

The miscellaneous liabilities included financing commitments of US$195 million (2016: US$255 million) for the joint venture Casebia Therapeutics LLP, United Kingdom, established in December 2015 with CRISPR Therapeutics AG, Switzerland, and a further financing commitment of US$70 million for the joint venture Cooksonia Opco LLC, United States, established in September 2017 with Ginkgo Bioworks, Inc., United States, which will operate in the area of the plant microbiome.

The miscellaneous liabilities included €321 million (2016: €271 million) from derivatives.

30. 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 and currency risks), together with its objectives, methods and procedures, is outlined in the Opportunity and Risk Report, which forms part of the Combined Management Report.

30.1 Financial instruments by category

The following table shows the carrying amounts and fair values of financial assets and liabilities for each financial instrument category and a reconciliation to the corresponding line item in the statements of financial position. Since the line items “Other receivables,” “Trade accounts payable” and “Other liabilities” contain both financial instruments and nonfinancial assets or liabilities (such as other tax receivables or advance payments for services to be received in the future), the reconciliation is shown in the column headed “Nonfinancial assets / liabilities.”

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Carrying Amounts and Fair Values of Financial Instruments

Dec.31, 2017

	Carried at amortized cost	Carried at fair value [fair value for information[1]]			Nonfinancial assets / liabilities	
€ million	Carrying amount	Based on quoted prices in active markets (Level 1) Carrying amount	Based on observable market data (Level 2) Carrying amount	Based on unobservable inputs (Level 3) Carrying amount	Carrying amount	Carrying amount in the statement of financial position
Trade accounts receivable	8,582					8,582
Loans and receivables	8,582					8,582
Other financial assets	1,823	452	2,085	803		5,163
Loans and receivables	1,731		[1,731]			1,731
Available-for-sale financial assets	35	448	1,452	793		2,728
Held-to-maturity financial assets	57		[58]			57
Derivatives that qualify for hedge accounting			296			296
Derivatives that do not qualify for hedge accounting		4	337	10		351
Other receivables	380			46	1,250	1,676
Loans and receivables	380		[380]			380
Available-for-sale financial assets				46		46
Nonfinancial assets					1,250	1,250
Cash and cash equivalents	7,581					7,581
Loans and receivables	7,581		[7,581]			7,581
Total financial assets	**18,366**	**452**	**2,085**	**849**		**21,752**
of which loans and receivables	18,274					18,274
of which available-for-sale financial assets	35	448	1,452	839		2,774
Financial liabilities	12,958	1,220	240			14,418
Carried at amortized cost	12,958	[11,327]	[2,183]			12,958
Carried at fair value (non-derivative)		1,220				1,220
Derivatives that qualify for hedge accounting			187			187
Derivatives that do not qualify for hedge accounting			53			53
Trade accounts payable	4,568				561	5,129
Carried at amortized cost	4,568					4,568
Nonfinancial liabilities					561	561
Other liabilities	681	2	319	7	1,759	2,768
Carried at amortized cost	681		[681]			681
Carried at fair value (non-derivative)				7		7
Derivatives that qualify for hedge accounting			288			288
Derivatives that do not qualify for hedge accounting		2	31			33
Nonfinancial liabilities					1,759	1,759
Total financial liabilities	**18,207**	**1,222**	**559**	**7**		**19,995**
of which carried at amortized cost	18,207					18,207
of which derivatives that qualify for hedge accounting			475			475
of which derivatives that do not qualify for hedge accounting		2	84			86

[1] Fair value of the financial instruments carried at amortized cost; the exemption provisions under IFRS 7.29(a) were applied for information on specific fair values.

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Carrying Amounts and Fair Values of Financial Instruments

Dec. 31, 2016

	Carried at amortized cost	Carried at fair value [fair value for information [1]]			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	Carrying amount in the statement of financial position
Trade accounts receivable	10,969					10,969
Loans and receivables	10,969					10,969
Other financial assets	2,245	523	3,985	803		7,556
Loans and receivables	2,148		[2,145]	[16]		2,148
Available-for-sale financial assets	32	520	3,283	794		4,629
Held-to-maturity financial assets	65		[68]			65
Derivatives that qualify for hedge accounting			269			269
Derivatives that do not qualify for hedge accounting		3	433	9		445
Other receivables	633			57	2,103	2,793
Loans and receivables	633		[633]			633
Available-for-sale financial assets				57		57
Nonfinancial assets					2,103	2,103
Cash and cash equivalents	1,899					1,899
Loans and receivables	1,899		[1,899]			1,899
Total financial assets	**15,746**	**523**	**3,985**	**860**		**21,114**
of which loans and receivables	15,649					15,649
of which available-for-sale financial assets	32	520	3,283	851		4,686
Financial liabilities	18,994		587			19,581
Carried at amortized cost	18,994	[16,040]	[3,362]			18,994
Carried at fair value (non-derivative)						–
Derivatives that qualify for hedge accounting			312			312
Derivatives that do not qualify for hedge accounting			275			275
Trade accounts payable	6,035				375	6,410
Carried at amortized cost	6,035					6,035
Nonfinancial liabilities					375	375
Other liabilities	840	2	252	25	2,259	3,378
Carried at amortized cost	840		[840]			840
Carried at fair value (nonderivative)				8		8
Derivatives that qualify for hedge accounting			165			165
Derivatives that do not qualify for hedge accounting		2	87	17		106
Nonfinancial liabilities					2,259	2,259
Total financial liabilities	**25,869**	**2**	**839**	**25**		**26,735**
of which carried at amortized cost	25,869					25,869
of which derivatives that qualify for hedge accounting			477			477
of which derivatives that do not qualify for hedge accounting		2	362	17		381

[1] Fair value of the financial instruments carried at amortized cost; the exemption provisions under IFRS 7.29(a) were applied for information on specific fair values.

The loans and receivables reflected in other financial assets and the liabilities measured at amortized cost also include receivables and liabilities under finance leases in which Bayer is the lessor or lessee and which are therefore measured in accordance with IAS 17.

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 loans and receivables, held-to-maturity financial investments and of financial liabilities carried 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 the creditworthiness of the counterparty. Where a market price is available, however, this is deemed to be the fair value.

The fair values of available-for-sale financial assets correspond to quoted prices 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) 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 value adjustments are determined to allow for the contracting party's credit risk.

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.

Fair values measured using unobservable inputs are categorized within Level 3 of the fair value hierarchy. This applies to certain available-for-sale 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 available-for-sale financial assets 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.

Embedded derivatives are separated from their respective host contracts. 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. 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.

Within financial liabilities, the fair value option permitted by IAS 39.11A was used for the first time for the debt instruments issued in June 2017 (exchangeable bond 2017/2020). On first-time recognition, the bond was designated as a financial liability at fair value through profit or loss.

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 30.1/3

Development of Financial Assets and Liabilities (Level 3)

	2016				2017			
€ million	Available-for-sale financial assets	Derivatives (net)	Liabilities measured at fair value (non-derivative)	Total	Available-for-sale financial assets	Derivatives (net)	Liabilities carried at fair value (non-derivative)	Total
Carrying amounts of net assets / (net liabilities), Jan. 1	**833**	**9**	**(37)**	**805**	**851**	**(8)**	**(8)**	**835**
Gains (losses) recognized in profit or loss	18	(17)	23	24	15	21	–	36
of which related to assets / liabilities recognized in the statements of financial position	18	(17)	–	1	15	21	–	36
Gains (losses) recognized outside profit or loss	9	–	–	9	(16)	–	–	(16)
Additions of assets / (liabilities)	46	–	–	46	6	–	–	6
Settlements of (assets) / liabilities	(23)	–	6	(17)	(17)	–	1	(16)
Disposals from divestments / changes in scope of consolidation	–	–	–	–	–	(3)	–	(3)
Transfers to a different fair-value hierarchy	(32)	–	–	(32)	–	–	–	–
Carrying amounts of net assets / (net liabilities), Dec. 31	**851**	**(8)**	**(8)**	**835**	**839**	**10**	**(7)**	**842**

The changes recognized in profit or loss were included in other operating income / expenses, in interest income in the financial result, and in exchange gains / losses.

Income, expense, gains and losses on financial instruments can be assigned to the following categories:

B 30.1/4

Income, Expense, Gains and Losses on Financial Instruments

					2017		
€ million	Loans and receivables	Held-to-maturity financial investments	Available for-sale financial assets	Held for trading	Liabilities carried at amortized cost	Liabilities carried at fair value (non-derivative)	Total
Interest income	61	–	37	–	78	–	176
Interest expense	–	–	–	(3)	(628)	–	(631)
Income / expenses from affiliated companies	–	–	2	–	–	–	2
Changes in fair value	–	–	–	17	–	(172)	(155)
Impairment losses	(139)	–	(1)	–	–	–	(140)
Impairment loss reversals	23	–	5	–	–	–	28
Exchange gains / losses	(733)	–	–	(232)	620	–	(345)
Gains / losses from retirements	–	–	5	–	–	–	5
Other financial income / expenses	(14)	–	(7)	–	–	–	(21)
Net result	**(802)**	**–**	**41**	**(218)**	**70**	**(172)**	**(1,081)**

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

					2016		
€ million	Loans and receivables	Held-to-maturity financial investments	Available-for-sale financial assets	Held for trading	Liabilities carried at amortized cost	Liabilities carried at fair value (non-derivative)	Total
Interest income	42	–	21	2	62	–	127
Interest expense	–	–	–	(3)	(597)	–	(600)
Income / expenses from affiliated companies	–	–	–	–	–	–	–
Changes in fair value	–	–	–	(71)	–	–	(71)
Impairment losses	(163)	–	(2)	–	–	–	(165)
Impairment loss reversals	23	–	–	–	–	–	23
Exchange gains / losses	348	–	–	(55)	(329)	–	(36)
Gains / losses from retirements	–	–	6	–	–	–	6
Other financial income / expenses	–	–	–	–	(34)	–	(34)
Net result	**250**	**–**	**25**	**(127)**	**(898)**	**–**	**(750)**

2016 figures restated

The interest expense of €628 million (2016: €597 million) from non-derivative financial liabilities also included the income and expense from interest-rate swaps that qualified for hedge accounting. Interest income from financial assets not measured at fair value through profit or loss amounted to €98 million (2016: €63 million). Interest income from interest-rate derivatives that qualified for hedge accounting was €78 million (2016: €62 million). The changes in fair values of financial assets held for trading related mainly to forward commodity contracts and embedded derivatives.

The changes of minus €172 million in the fair value of (nonderivative) liabilities measured at fair value contain fair value adjustments pertaining to debt instruments (exchangeable bond 2017/2020) issued in June 2017. The changes in fair value relating to credit risks were not material.

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 €654 million (2016: €630 million), and the volume with negative fair values was €520 million (2016: €762 million). Included here is an amount of €312 million (2016: €362 million) in positive and negative fair values of derivatives concluded with the same contracting party.

30.2 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 an as yet unpaid €1,005 million (2016: €1,005 million) portion of the effective initial fund of Bayer-Pensionskasse VVaG, which may result in further payments by Bayer AG in subsequent years.

B 30.2/1

Maturity Analysis of Financial Instruments

€ million	Dec. 31, 2017 **Carrying amount**	2018	2019	2020	2021	2022	after 2022
		Interest and repayment					
Financial liabilities							
Bonds and notes / promissory notes	12,436	719	2,096	1,487	2,288	236	7,125
Liabilities to banks	534	527	20	–	–	–	–
Remaining liabilities	1,208	716	359	40	32	26	177
Trade accounts payable	4,568	4,555	11	2	–	–	–
Other liabilities							
Accrued interest on liabilities	149	140	1	1	1	1	5
Remaining liabilities	539	455	66	3	2	2	11
Liabilities from derivatives							
Derivatives that qualify for hedge accounting	475	443	34	–	6	–	–
Derivatives that do not qualify for hedge accounting	86	88	1	2	–	–	–
Receivables from derivatives							
Derivatives that qualify for hedge accounting	296	144	62	17	2	–	–
Derivatives that do not qualify for hedge accounting	351	331	4	1	1	–	–
Loan commitments	–	1,005	–	–	–	–	–
Financial guarantees	–	12	–	–	–	–	–

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Maturity Analysis of Financial Instruments

€ million	Dec. 31, 2016 Carrying amount	2017	2018	2019	2020	2021	after 2021
		Interest and repayment					
Financial liabilities							
Bonds and notes/promissory notes	15,991	2,261	2,160	2,367	295	2,916	8,093
Liabilities to banks	1,837	884	998	39	–	–	9
Remaining liabilities	1,166	293	303	382	61	58	268
Trade accounts payable	6,035	6,028	4	2	1	–	–
Other liabilities							
Accrued interest on liabilities	186	181	1	1	1	–	2
Remaining liabilities	662	626	3	5	2	1	25
Liabilities from derivatives							
Derivatives that qualify for hedge accounting	477	178	231	157	2	–	–
Derivatives that do not qualify for hedge accounting	381	374	3	4	2	1	1
Receivables from derivatives							
Derivatives that qualify for hedge accounting	269	210	23	4	3	2	–
Derivatives that do not qualify for hedge accounting	445	467	2	2	1	1	1
Loan commitments	–	1,213	–	–	–	–	–
Financial guarantees	–	14	–	–	–	–	3

30.3 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. A bond of Bayer AG denominated in British pounds was swapped on the issuance date into a fixed-rate euro bond by means of a cross-currency interest-rate swap, which was designated as a cash flow hedge. Cross-currency interest-rate swaps used to hedge intra-Group loans were also designated as cash flow hedges.

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.

Foreign currency risks related to the planned acquisition of Monsanto Company were partially hedged with currency derivatives, which were designated as cash flow hedges.

Interest-rate risk

The interest-rate risks from fixed-interest borrowings are managed in part using interest-rate swaps. Two interest-rate swaps in the total amount of €200 million were designated as fair value hedges for the €750 million DIP bond issued in 2014 and maturing in 2021.

Losses of €3 million were recorded on fair-value hedging instruments in 2017 (2016: €1 million). Gains of €4 million were recorded on the underlying hedged items (2016: €1 million).

Interest-rate risks relating to the planned acquisition of Monsanto were partly hedged using interest-rate derivatives. These were designated as cash flow hedges.

Commodity price risks

Hedging contracts are also used to partly reduce exposure to fluctuations in future cash outflows and inflows resulting from price changes on procurement and selling markets.

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 declined in 2017 by €89 million (2016: increased by €44 million) due to changes in the fair values of derivatives net of tax. Total changes of €3 million in the fair values of derivatives were expensed in 2017 (2016: €3 million). The respective pro-rated deferred tax income of €2 million (2016: €2 million) was likewise recognized through profit or loss.

No material ineffective portions of hedges required recognition through profit or loss in 2017 or 2016.

The income and expense from cash flow hedges recognized in other comprehensive income as at December 31, 2017, mainly comprised gains of €177 million (2016: €204 million) and losses of €289 million (2016: €143 million) from the hedging of forecasted transactions in foreign currencies and the planned acquisition of Monsanto Company. Of these gains and losses, a net amount of €102 million (2016: minus €91 million) will be re-classifiable to profit or loss within one year, and a net amount of minus €17 million (2016: €2 million) in subsequent years.

The fair values of existing contracts in the major categories at the end of the reporting period are indicated in the following table together with the included volumes of hedges.

B 30.3/1

Fair Values of Derivatives

	Dec. 31, 2016			Dec. 31, 2017		
€ million	Notional amount[1]	Positive fair value	Negative fair value	Notional amount[1]	Positive fair value	Negative fair value
Currency hedging of recorded transactions	**22,645**	**299**	**(587)**	**12,321**	**233**	**(240)**
Forward exchange contracts	20,454	296	(273)	10,399	144	(53)
Cross-currency interest-rate swaps	2,191	3	(314)	1,922	89	(187)
of which cash flow hedges	2,146	3	(312)	1,880	87	(187)
Currency hedging of forecasted transactions	**17,799**	**317**	**(206)**	**9,475**	**116**	**(194)**
Forward exchange contracts	3,805	48	(145)	9,292	105	(194)
of which cash flow hedges	3,672	43	(138)	9,205	103	(192)
Currency options	13,994	269	(61)	183	11	–
of which cash flow hedges	13,698	161	(5)	183	11	–
Interest-rate hedging of recorded transactions	**200**	**14**	**–**	**200**	**11**	**–**
Interest-rate swaps	200	14	–	200	11	–
of which fair value hedges	200	14	–	200	11	–
Interest-rate hedging of forecasted transactions	**–**	**–**	**–**	**9,086**	**64**	**(81)**
Interest-rate swaps	–	–	–	9,086	64	(81)
of which cash flow hedges	–	–	–	9,086	64	(81)
	–	–	–	–	–	–
Commodity price hedging	**168**	**5**	**(4)**	**420**	**6**	**(3)**
Forward commodity contracts	167	4	(4)	414	6	(3)
Commodity option contracts	1	1	–	6	–	–
Hedging of stock-based employee compensation programs	**532**	**48**	**(22)**	**544**	**20**	**(15)**
Share price options	152	48	–	75	5	–
of which cash flow hedges	152	48	–	75	5	–
Forward share transactions	380	–	(22)	469	15	(15)
of which cash flow hedges	380	–	(22)	469	15	(15)
Total	**41,344**	**683**	**(819)**	**32,046**	**450**	**(533)**
of which current derivatives	38,349	635	(514)	30,259	317	(499)
for currency hedging	38,111	597	(510)	20,678	242	(415)
for interest-rate hedging[2]	–	3	–	9,086	64	(81)
for raw material price hedging	168	5	(4)	420	6	(3)
for hedging of stock-based employee compensation programs	70	30	–	75	5	–

[1] The notional amount is reported as gross volume, which also contains economically closed hedges.
[2] The portion of the fair value of long-term interest-rate swaps that relates to current interest payments was classified as current.

Other information

In connection with the sale of Covestro AG shares in 2017, Bayer AG entered into derivative contracts. These resulted in Bayer AG retaining economic exposure to the price of Covestro AG shares. As at the end of the year, Bayer AG continued to hold derivatives on the Covestro AG shares with a notional amount of €752 million, and had generated a gain of €50 million from these derivatives. The derivatives had a fair value of €150 million as of December 31, 2017, that was also recognized in profit and loss.

31. 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 31/1

Contingent Liabilities

€ million	Dec. 31, 2016	Dec. 31, 2017
Warranties	100	88
Guarantees	264	148
Other contingent liabilities	444	614
Total	**808**	**850**

The guarantees mainly comprise a declaration issued by Bayer AG to the trustees of the U.K. pension plans guaranteeing the pension obligations of Bayer Public Limited Company and Bayer CropScience Limited. Under the declaration, Bayer AG – in addition to the two companies – undertakes to make further payments into the plans upon receipt of a payment request from the trustees. The net liability with respect to these defined benefit plans as of December 31, 2017, declined to €148 million (2016: €264 million).

Other financial commitments

The other financial commitments were as follows:

B 31/2

Other Financial Commitments

€ million	Dec. 31, 2016	Dec. 31, 2017
Operating leases	1,101	801
Commitments under purchase agreements for property, plant and equipment	479	493
Contractual obligation to acquire intangible assets	243	83
Capital contribution commitments	182	149
Binding acquisition agreement with Monsanto Company, St. Louis, Missouri, U.S.A.[1]	53,000	47,000
Unpaid portion of the effective initial fund	1,213	1,005
Potential payment obligations under R&D collaboration agreements	2,444	2,349
Revenue-based milestone payment commitments	1,839	1,923
Total	**60,501**	**53,803**

[1] The contingent financial commitment of approximately US$56 billion was translated at the closing rate and rounded.

On September 14, 2016, Bayer signed a definitive merger agreement with Monsanto Company, St. Louis, Missouri, United States, which provides for Bayer's acquisition of all outstanding shares in Monsanto Company against a cash payment of US$128 per share. Bayer thus has a contingent financial commitment in the amount of approximately US$56 billion to acquire Monsanto's entire outstanding capital stock. Further details of this planned acquisition are given in Note [6.2].

Financial commitments resulting from orders already placed under purchase agreements related to planned or ongoing capital expenditure projects totaled €493 million (2016: €479 million), while contractual obligations to acquire intangible assets totaled €83 million (2016: €243 million).

The nondiscounted future minimum lease payments relating to operating leases totaled €801 million (2016: €1,101 million). The decline is largely due to the deconsolidation of Covestro. The maturities of the respective payment obligations were as follows:

B 31/3

Operating Leases

Maturing in	Dec. 31, 2016	Maturing in	Dec. 31, 2017
	€ million		€ million
2017	237	2018	166
2018	192	2019	143
2019	161	2020	124
2020	138	2021	93
2021	102	2022	73
2022 or later	271	2023 or later	202
Total	**1,101**	**Total**	**801**

The Bayer Group has entered into cooperation agreements with third parties under which it has agreed to fund various research and development projects or has assumed other payment obligations based on the achievement of certain milestones or other specific conditions. If all of these payments have to be made, their maturity distribution as of December 31, 2017, was expected to be as set forth in the following table. 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.

B 31/4

Potential Payment Obligations Under R&D Collaboration Agreements

Maturing in	Dec. 31, 2016	Maturing in	Dec. 31, 2017
	€ million		€ million
2017	233	2018	157
2018	151	2019	510
2019	333	2020	143
2020	66	2021	143
2021	28	2022	54
2022 or later	1,633	2023 or later	1,342
Total	**2,444**	**Total**	**2,349**

In addition to the above commitments, there were also revenue-based milestone payment commitments totaling €1,923 million (2016: €1,839 million), of which €1,764 million (2016: €1,834 million) was not expected to fall due until 2023 (2016: 2022) or later. These commitments are also highly uncertain.

32. 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 revenues and earnings.

Legal proceedings currently considered to involve material risks are outlined below. The legal proceedings referred to do not represent an exhaustive list.

Product-related litigation

Mirena™: As of January 30, 2018, lawsuits from approximately 2,900 users of Mirena™, a levonorgestrel-releasing intrauterine system providing long-term contraception, had been served upon Bayer in the United States (excluding lawsuits no longer pending). Plaintiffs allege personal injuries resulting from the use of Mirena™, including perforation of the uterus, ectopic pregnancy or idiopathic intracranial hypertension, and seek compensatory and punitive damages. Plaintiffs claim, inter alia, that Mirena™ is defective and that Bayer knew or should have known of the risks associated with it and failed to adequately warn its users. Additional lawsuits are anticipated. In April 2017, most of the cases pending in U.S. federal courts in which plaintiffs allege idiopathic intracranial hypertension were consolidated in a multidistrict litigation ("MDL") proceeding for common pre-trial management. As of January 30, 2018, lawsuits from approximately 400 users of Mirena™ alleging idiopathic intracranial hypertension had been served upon Bayer in the United States. Another MDL proceeding concerning perforation cases has, in the meantime, been dismissed. The Second Circuit Court of Appeals affirmed the perforation MDL district court's summary judgment order of 2016 dismissing approximately 1,230 cases pending before that court. In August 2017, Bayer reached an agreement in principle with plaintiffs' counsel leadership for global settlement of the perforation litigation, for a total amount of US$12.2 million. As of January 30, 2018, a total of approximately 4,000 cases would be included in the settlement. The idiopathic intracranial hypertension MDL proceeding is not included in the settlement.

As of January 30, 2018, five Canadian lawsuits relating to Mirena™ seeking class action certification had been served upon Bayer. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Xarelto™: As of January 30, 2018, U.S. lawsuits from approximately 22,000 recipients of Xarelto™, an oral anticoagulant for the treatment and prevention of blood clots, had been served upon Bayer. Plaintiffs allege personal injuries from the use of Xarelto™, including cerebral, gastrointestinal or other bleeding and death, and seek compensatory and punitive damages. They claim, amongst other things, that Xarelto™ is defective and that Bayer knew or should have known of these risks associated with the use of Xarelto™ and failed to adequately warn its users. Additional lawsuits are anticipated. Cases pending in U.S. federal courts have been consolidated in an MDL for common pre-trial management. In May, June and August 2017, the first three MDL trials resulted in complete defense verdicts; plaintiffs have appealed all three verdicts. In January 2018, after the first trial to proceed in Pennsylvania state court had initially resulted in a judgment in favor of the plaintiff, the trial judge vacated the jury's verdict and granted judgment in favor of Bayer. Further Pennsylvania state court trials are currently scheduled for the first and second quarters of 2018. Bayer anticipates that additional trials will be scheduled.

As of January 30, 2018, ten Canadian lawsuits relating to Xarelto™ seeking class action certification had been served upon Bayer. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Essure™: As of January 30, 2018, U.S. lawsuits from approximately 16,100 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. Additional lawsuits are anticipated.

As of January 30, 2018, two Canadian lawsuits relating to Essure™ seeking class action certification had been served upon 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). 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 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, the plaintiff sought authorization (certification) of a class for which a motion was heard in November 2017. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

In connection with the above-mentioned proceedings, Bayer is insured against statutory product liability claims against Bayer to the extent customary in the respective industries and has, based on the information currently available, taken appropriate accounting measures for anticipated defense costs. However, the accounting measures relating to Essure™ claims exceed the available insurance coverage.

Patent disputes

Adempas™: In January 2018, Bayer filed patent infringement lawsuits in a U.S. federal court against Alembic Pharmaceuticals Limited, Alembic Global Holding SA, Alembic Pharmaceuticals, Inc. and INC Research, LLC (together “Alembic”), against MSN Laboratories Private Limited and MSN Pharmaceuticals Inc. (together “MSN”) and against Teva Pharmaceuticals USA, Inc. and Teva Pharmaceutical Industries Ltd. (together “Teva”). In December 2017, Bayer had received notices of an Abbreviated New Drug Application with a paragraph IV certification (“ANDA IV”) pursuant to which Alembic, MSN and Teva each seek approval of a generic version of Bayer’s pulmonary hypertension drug Adempas™ in the United States.

Betaferon™/Betaseron™: In 2010, Bayer filed a complaint against Biogen Idec MA Inc. in a U.S. federal court seeking a declaration by the court that a patent issued to Biogen in 2009 is invalid and not infringed by Bayer’s production and distribution of Betaseron™, Bayer’s drug product for the treatment of multiple sclerosis. Biogen is alleging patent infringement by Bayer through Bayer’s production and distribution of Betaseron™ and Extavia™ and has sued Bayer accordingly. Bayer manufactures Betaseron™ and distributes the product in the United States. Extavia™ is also a drug product for the treatment of multiple sclerosis; it is manufactured by Bayer, but distributed in the United States by Novartis Pharmaceuticals Corporation, another defendant in the lawsuit. In 2016, the U.S. federal court decided a disputed issue regarding the scope of the patent in Biogen’s favor. Bayer disagrees with the decision, which may be appealed at the conclusion of the proceedings in the U.S. federal court.

Damoctocog alfa pegol (BAY 94-9027, long-acting recombinant factor VIII): In August 2017, Bayer filed a lawsuit in a U.S. federal court against Nektar Therapeutics ("Nektar"), Baxalta Incorporated and Baxalta U.S., Inc. (together "Baxalta") seeking a declaration by the court that a patent by Nektar is invalid and not infringed by Bayer's drug candidate BAY 94-9027 for the treatment of hemophilia A. In September 2017, Baxalta and Nektar filed a complaint in a different U.S. federal court against Bayer alleging that BAY 94-9027 infringes seven other patents by Nektar. Regarding the complaint by Bayer, Nektar and Baxalta gave Bayer a covenant not to make any claims against Bayer for infringement of that patent. Bayer amended the complaint to now seek a declaration by the court that the seven other patents by Nektar are not infringed by BAY 94-9027. The patents are part of a patent family registered in the name of Nektar and further comprising European patent applications with the title "Polymer-factor VIII moiety conjugates" which are at issue in a lawsuit Bayer filed against Nektar in 2013 in the district court of Munich, Germany. In this proceeding, Bayer claims rights to the European patent applications based on a past collaboration between Bayer and Nektar in the field of hemophilia. However, Bayer believes that the patent family does not include any valid patent claim relevant for Bayer's drug candidate BAY 94-9027 for the treatment of hemophilia A.

Nexavar™: In 2015, Bayer filed patent infringement lawsuits in a U.S. federal court against Mylan Pharmaceuticals Inc. and Mylan Inc. (together "Mylan"). In 2014 and 2015, Bayer had received notices of an ANDA IV application pursuant to which Mylan seeks approval of a generic version of Bayer's cancer drug Nexavar™ in the United States. In October 2017, Bayer reached agreement with Mylan to settle this patent dispute. Under the settlement terms, Mylan will obtain a license to sell its generic version of Nexavar™ in the United States at a date after the expiration of the patent for the active ingredient expiring in January 2020. In 2016, Bayer had received another notice of such an ANDA IV application by Teva Pharmaceuticals USA, Inc. Bayer filed a patent infringement lawsuit against Teva in the same U.S. federal court. In January 2018, Bayer reached agreement with Teva to settle this patent dispute. Under the settlement terms, Teva will obtain a license to sell its generic version of Nexavar™ in the United States at a date after the expiration of the patent for the active ingredient expiring in January 2020.

Stivarga™: In 2016, Bayer filed patent infringement lawsuits in a U.S. federal court against Apotex, Inc. and Apotex Corp. (together "Apotex") and against Teva. Bayer had received notices of an ANDA IV application pursuant to which Apotex and Teva each seek approval of a generic version of Bayer's cancer drug Stivarga™ in the United States.

Xarelto™: In 2015, Bayer and Janssen Pharmaceuticals filed a patent infringement lawsuit in a U.S. federal court against Aurobindo Pharma Limited, Aurobindo Pharma USA, Inc. (together "Aurobindo"), Breckenridge Pharmaceutical Inc. ("Breckenridge"), Micro Labs Ltd., Micro Labs USA Inc. (together "Micro Labs"), Mylan, Prinston Pharmaceutical Inc. ("Prinston"), Sigmapharm Laboratories, LLC ("Sigmapharm"), Torrent Pharmaceuticals, Limited and Torrent Pharma Inc. (together "Torrent"). Bayer had received notices of an ANDA IV application by Aurobindo, Breckenridge, Micro Labs, Mylan, Prinston, Sigmapharm and Torrent, each seeking approval to market a generic version of Xarelto™, an oral anticoagulant for the treatment and prevention of blood clots, in the United States. In 2016, Bayer received another notice of such an ANDA IV application by InvaGen Pharmaceuticals, Inc. ("InvaGen"). Bayer and Janssen Pharmaceuticals filed a patent infringement lawsuit against InvaGen in the same U.S. federal court.

Bayer believes it has meritorious defenses in the above ongoing patent disputes and intends to defend itself vigorously.

Further Legal Proceedings

Trasylol™/Avelox™: A qui tam complaint relating to marketing practices for Trasylol™ (aprotinin) and Avelox™ (moxifloxacin) filed by a former Bayer employee is pending in the United States District Court in New Jersey. The U.S. government has declined to intervene at the present time.

Newark Bay Environmental Matters: In the United States, Bayer is one of numerous parties involved in a series of claims brought by federal and state environmental protection agencies. The claims arise from operations by entities which historically were conducted near Newark Bay or surrounding bodies of water, or which allegedly discharged hazardous waste into these waterways or onto nearby land. Bayer and the other potentially responsible parties are being asked to remediate and contribute to the payment of past and future remediation or restoration costs and damages. In 2016, Bayer learned that two major potentially responsible parties had filed for protection under Chapter 11 of the U.S. Bankruptcy Code. While Bayer remains unable to determine the extent of its liability for these matters, this development is likely to adversely affect the share of costs potentially allocated to Bayer.

In the Lower Passaic River matter, a group of more than sixty companies including Bayer is investigating contaminated sediments in the riverbed under the supervision of the United States Environmental Protection Agency (EPA) and other governmental authorities. Future remediation will involve some form of dredging, the nature and scope of which are not yet defined, and potentially other tasks. The cost of the investigation and the remediation work may be substantial if the final remedy involves extensive dredging and disposal of impacted sediments. In the Newark Bay matter, an unaffiliated party is currently conducting an investigation of sediments in Newark Bay under EPA supervision. The investigation is in a preliminary stage. Bayer has contributed to certain investigation costs in the past and may incur costs for future investigation and remediation activities in Newark Bay.

Bayer has also been notified by governmental authorities acting as natural resource trustees that it may have liability for natural resource damages arising from the contamination of the Lower Passaic River, Newark Bay and surrounding water bodies. Bayer is currently unable to determine the extent of its liability.

Asbestos: A further risk may arise from asbestos litigation in the United States. In many cases, the 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. Bayer believes it has meritorious defenses and intends to defend itself vigorously.

Tax Proceedings

Stamp taxes in Greece: In 2014, 2016 and 2017, a Greek administrative court of first instance dismissed Bayer's lawsuits against the assessment of stamp taxes and contingent penalties in a total amount of approximately €130 million on certain intra-Group loans to a Greek subsidiary. Bayer is convinced that the decisions are wrong and either has appealed the relevant decisions or plans to do so in due course. Bayer believes it has meritorious arguments to support its legal position and intends to defend itself vigorously.

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. Cash flows are classified by operating, investing and financing activities in accordance with IAS 7 (Statement of Cash Flows). Effects of changes in the scope of consolidation are stated separately.

Of the cash and cash equivalents, an amount of €14 million (2016: €17 million) had limited availability due to foreign exchange restrictions. Past experience has shown such restrictions to be of short duration. The above amount included €0 million (2016: €3 million) of exchange-restricted cash in Venezuela. The conversion of cash from Venezuelan bolivars (VEF) into U.S. dollars is subject to a government approval process.

The cash flows reported by consolidated companies outside the eurozone are translated at average monthly exchange rates, with the exception of cash and cash equivalents, which are translated at closing rates. The “Change in cash and cash equivalents due to exchange rate movements” is reported in a separate line item.

33. Net cash provided by (used in) operating activities

The operating cash flow (total) declined by 10.5% in 2017, to €8,134 million. The prior-year figure included inflows from the divestment of Diabetes Care. The operating cash flow from continuing operations was €6,611 million, up 2.7% from the previous year. It included the operating portion of the payments received from DOW Chemical in connection with a patents dispute.

The transfer of Covestro shares with a value of €504 million (2016: €337 million) to Bayer Pension Trust e. V. was a noncash transaction and therefore did not result in an operating cash outflow.

34. Net cash provided by (used in) investing activities

The net cash outflow for investing activities in 2017 amounted to €432 million (2016: €8,729 million).

Additions to property, plant and equipment and intangible assets in 2017 resulted in a cash outflow of €2,366 million (2016: €2,578 million). Cash inflows from sales of property, plant and equipment and intangible assets amounted to €241 million (2016: €111 million).

The proceeds of €999 million from the sale of Covestro shares as of September 29, 2017, which, together with the control termination agreement concluded, led to the de facto loss of control, less the cash of €637 million derecognized with Covestro, resulted in a cash inflow of €362 million from divestments. The sale of some of these shares by the banks in December 2017 resulted in a further cash inflow of €37 million.

The net cash inflow from noncurrent and current financial assets amounted to €1,230 million (2016: net cash outflow of €6,335 million).

35. Net cash provided by (used in) financing activities

In 2017 there was a net cash outflow of €1,881 million (2016: €350 million) for financing activities. Net loan repayments amounted to €2,479 million (2016: €730 million).

Cash outflows for dividend payments amounted to €2,364 million (2016: €2,126 million). Net interest payments – including payments for and receipts from interest-rate swaps – declined to €732 million (2016: €794 million). The sale of Covestro shares prior to the de facto loss of control resulted in a total net inflow of €3,717 million. In 2016, the net inflow of €3,952 million from the mandatory convertible notes was reflected as a capital contribution of €3,300 million and a borrowing of €652 million.

The transfer of Covestro shares with a value of €504 million (2016: €337 million) to Bayer Pension Trust e. V. was a noncash transaction and therefore did not result in a financing cash inflow.

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Financial Liabilities

		Cash flows	Non-cash changes				
€ million	**Dec. 31, 2016**		**Acquisition Divestment**	**Currency effects**	**New contracts**	**Fair value changes[1]**	**Dec. 31, 2017**
Bonds and notes / promissory notes	15,991	(1,121)	(1,492)	(788)	–	(154)	12,436
Liabilities to banks	1,837	(1,006)	(92)	(203)	–	(2)	534
Liabilities under finance leases	436	(153)	(229)	(28)	212	–	238
Liabilities from derivatives	587	(434)	(6)	–	–	93	240
Other financial liabilities	730	235	–	(4)	–	9	970
Total	**19,581**	**(2,479)**	**(1,819)**	**(1,023)**	**212**	**(54)**	**14,418**

[1] Including discount effects

Other Information

36. Audit fees

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

	PwC	Deloitte	Of which PwC GmbH WPG	Of which Deloitte GmbH WPG
€ million	**2016**	**2017**	**2016**	**2017**
Financial statements auditing	16	9	7	3
Audit-related services and other audit work	2	2	1	2
Tax consultancy	3	1	–	–
Other services	7	5	5	4
Total	**28**	**17**	**13**	**9**

The fees for the auditing of financial statements mainly comprised those for the audits of the consolidated financial statements of the Bayer Group and the financial statements of Bayer AG and its subsidiaries. In 2016, €2 million in fees related to the auditing of the Covestro Group's financial statements.

The non-audit-related services primarily related to the analysis of financial information concerning business entities considered for divestment (Other services), the assessment of financial and nonfinancial information outside of financial statement auditing (Audit-related services and other audit work), and compliance-related tax consultancy services that had neither a material or direct impact on the annual financial statements or consolidated financial statements.

Deloitte has been Bayer's auditor since 2017 and is thus the successor to PricewaterhouseCoopers (PwC). The Independent Auditor's Report on the consolidated financial statements for fiscal 2017 was signed by Mr. Heiner Kompenhans and Prof. Frank Beine. Both signed the Independent Auditor's Report for the first time for the year ended December 31, 2017, and are the responsible audit partners.

37. Related parties

Related parties as defined in IAS 24 (Related Party Disclosures) 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, joint ventures and associates included in the consolidated financial statements at cost of acquisition or using the equity method, and post-employment benefit plans, as well as the corporate officers of Bayer AG whose compensation is reported in Note [38] and in the Compensation Report, which forms part of the Combined Management Report.

Transactions with nonconsolidated subsidiaries, joint ventures and associates included in the consolidated financial statements at cost of acquisition or using the equity method, and post-employment benefit plans are carried out on an arm's-length basis.

The following table shows the volume of transactions with related parties included in the consolidated financial statements of the Bayer Group at amortized cost or using the equity method, and with post-employment benefit plans:

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Related Parties

	2016				2017			
€ million	Sales of goods and services	Purchases of goods and services	Receivables	Liabilities	Sales of goods and services	Purchases of goods and services	Receivables	Liabilities
Nonconsolidated subsidiaries	4	5	9	19	5	6	6	16
Joint ventures	24	–	4	243	25	–	3	164
Associates	34	557	3	6	84	84	119	87
Post-employment benefit plans	–	–	907	63	–	–	974	70

Intercompany profits and losses for companies accounted for in the consolidated financial statements using the equity method were immaterial in 2017 and 2016.

In the second quarter of 2017, Bayer AG increased the coverage of Bayer Pension Trust e. V. through a deposit of 8 million of the shares it held in Covestro AG. The shares deposited amounted to 4.0% of the outstanding shares of Covestro AG and had a value of €504 million.

Due to the loss of control at the end of the third quarter of 2017, Covestro is now an associate. Consequently, receivables from and payables to associates both increased from €0.0 billion as of December 31, 2016, to €0.1 billion as of December 31, 2017. In this connection, goods and services received from associates declined from €0.6 billion to €0.1 billion. From the end of the third quarter of 2017, transactions in goods and services between Covestro and its associates are no longer reflected in the consolidated financial statements of the Bayer Group.

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 (2016: €150 million) for Bayer-Pensionskasse VVaG. The entire amount remained undrawn as of December 31, 2017. The carrying amount as of December 31, 2017, was €152 million (2016: €154 million). Loan capital was first provided to Bayer-Pensionskasse VVaG in 2008 for its effective initial fund. This capital had a nominal volume of €595 million as of December 31, 2017 (2016: €595 million). The carrying amount as of December 31, 2017, was €605 million (2016: €612 million). The outstanding receivables, comprised of different tranches, are each subject to a five-year interest-rate adjustment mechanism. Interest income of €15 million was recognized for 2017 (2016: €18 million).

Impairment losses of €2 million were recognized on receivables from associates in 2017 (2016: €0 million).

38. Total compensation of the Board of Management and the Supervisory Board, advances and loans

The compensation of the Board of Management comprises short-term payments, stock-based payments and post-employment benefits.

The following table shows the individual components of the Board of Management's compensation according to IFRS. Further details are provided in the Compensation Report, which forms part of the Combined Management Report:

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Board of Management Compensation according to IFRS

€ thousand	2016	2017
Fixed annual compensation	6,385	6,148
Fringe benefits	664	266
Total short-term non-performance-related compensation	**7,049**	**6,414**
Short-term performance-related cash compensation	9,063	4,890
Total short-term compensation	**16,112**	**11,304**
Change in value of existing entitlements to stock-based compensation (virtual Bayer shares)	(1,275)	538
Stock-based compensation (Aspire) earned in the respective year	5,217	9,082
Change in value of existing entitlements to stock-based compensation (Aspire)	(923)	(641)
Total stock-based compensation (long-term incentive)	**3,019**	**8,979**
Service cost for pension entitlements earned in the respective year	3,902	3,907
Total long-term compensation	**6,921**	**12,886**
Severance indemnity in connection with the termination of a service contract	4,542	1,978
Aggregate compensation (IFRS)	**27,575**	**26,168**

In addition to the above compensation, actuarial gains of €245 thousand (2016: losses of €3,196 thousand) incurred in connection with pension obligations to the currently serving members of the Board of Management were recognized outside profit or loss. The losses in the previous year mainly resulted from the decline in the level of interest rates.

Pension payments to former members of the Board of Management and their surviving dependents in 2017 amounted to €12,758 thousand (2016: €12,800 thousand). The defined benefit obligation for former members of the Board of Management and their surviving dependents amounted to €184,479 thousand (2016: €188,850 thousand).

The compensation of the Supervisory Board amounted to €3,703 thousand (2016: €3,479 thousand).

In addition to their compensation as members of the Supervisory Board, those employee representatives who are employees of Bayer Group companies receive compensation unrelated to their service on the Supervisory Board. The total amount of such compensation in 2017 was €767 thousand (2016: €939 thousand).

Pension obligations for employee representatives on the Supervisory Board amounted to €3,941 thousand (2016: €4,399 thousand).

There were no advances or loans to members of the Board of Management or the Supervisory Board outstanding as of December 31, 2017, nor at any time during 2017 or 2016.

39. Events after the end of the reporting period

Sale of 10.4% of the shares in Covestro

On January 10, 2018, Bayer AG reduced its direct interest in Covestro from 24.6% to 14.2%. This was achieved by selling 21 million shares to institutional investors at a price of €86.25 per share. In addition to Bayer AG's direct stake in Covestro, Bayer Pension Trust holds a further 8.9%. As already announced, Bayer intends to achieve full separation from Covestro in the medium term.

The proceeds from the divestment of Covestro shares were largely used to reduce the syndicated credit facility arranged to finance the planned acquisition of Monsanto by US$1.8 billion to US$49.7 billion.

Divestments in conjunction with the planned acquisition of Monsanto

In connection with the proposed acquisition of Monsanto and related anti-trust clearance proceedings, Bayer has committed to divest its entire vegetable seed business, in addition to the sale of certain Crop Science businesses to BASF. Certain additional business activities of Bayer and Monsanto may also be sold or out-licensed. Through the move, Bayer is actively addressing observations expressed by anti-trust authorities. Any sales and licenses would be subject to a successful closing of the proposed acquisition of Monsanto, which remains subject to customary closing conditions, including receipt of required regulatory approvals.

Leverkusen, February 20, 2018

Bayer Aktiengesellschaft

The Board of Management

Responsibility Statement

To the best of our knowledge, and in accordance with the applicable reporting principles for financial reporting, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Bayer Group, and the combined management report includes a fair review of the development and performance of the business and the position of the Bayer Group and Bayer AG, together with a description of the principal opportunities and risks associated with the expected development of the Bayer Group and Bayer AG.

Leverkusen, February 20, 2018
Bayer Aktiengesellschaft

The Board of Management

Werner Baumann
Chairman

Liam Condon

Johannes Dietsch

Dr. Hartmut Klusik

Kemal Malik

Erica Mann

Dieter Weinand

Independent Auditor's Report

To: Bayer Aktiengesellschaft, Leverkusen

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND THE COMBINED MANAGEMENT REPORT

Audit opinions

We audited the consolidated financial statements of Bayer Aktiengesellschaft, Leverkusen, and its subsidiaries (the Group), which comprise the consolidated statements of financial position as at December 31, 2017, the consolidated income statement and consolidated statement of comprehensive income, the consolidated statement of changes in equity and the consolidated statements of cash flows for the fiscal year from January 1, 2017 through December 31, 2017 as well as the notes to the consolidated financial statements, including a summary of significant accounting policies. In addition, we audited the group management report of Bayer Aktiengesellschaft, Leverkusen, which is combined with the Company's management report, for the fiscal year from January 1, 2017 through December 31, 2017. In conformity with German legal regulations, we have not audited the parts of the combined management report specified in the Chapter "Other information" of our independent auditor's report with regard to their content.

In our opinion, based on our knowledge obtained during the audit,

- the accompanying consolidated financial statements comply with International Financial Reporting Standards (IFRS) as adopted by the EU and the supplementary German legal regulations to be applied in accordance with Section 315e (1) German Commercial Code (HGB) in all material respects and give a true and fair view of the Group's net assets and financial position as of December 31, 2017 as well as its results of operations for the fiscal year from January 1, 2017 through December 31, 2017 in accordance with these requirements and
- the accompanying combined management report as a whole provides a suitable 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 suitably presents the opportunities and risks of future development. Our audit opinion on the combined management report does not extend to the content of the parts of the combined management report detailed in the Chapter "Other information" section.

Pursuant to Section 322 (3) Sentence 1 German Commercial Code (HGB), we state that our audit has not led to any reservations with respect to the propriety of the consolidated financial statements and the combined management report.

Basis for the audit opinions

We conducted our audit of the consolidated financial statements and the combined management report in accordance with Section 317 German Commercial Code (HGB) and the EU Audit Regulation (No. 537/2014; hereinafter referred to as "EU Audit Regulation"), and generally accepted German standards for the audit of financial statements promulgated by the Institute of Public Auditors in Germany [Institut der Wirtschaftsprüfer] (IDW). We conducted our audit of the consolidated financial statements also in accordance with International Standards on Auditing (ISA). Our responsibilities under these requirements, principles, and standards are further described in the Section "Auditor's responsibility for the audit of the consolidated financial statements and the combined management report" of our report. We are independent of the group companies in accordance with European and German commercial law and rules of professional conduct and we have fulfilled our other ethical responsibilities applicable in Germany in accordance with these requirements. In addition, pursuant to Article 10 (2) lit. f EU Audit Regulation, we declare that we have not provided any prohibited non-audit services pursuant to Article 5 (1) 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 fiscal year from January 1, 2017 through December 31, 2017. These matters were addressed in the context of our audit of the consolidated financial statements as a whole and in forming our opinion thereon but we do not provide a separate opinion on these issues.

In the following we present the key audit matters in our view:

1. Sales of shares in Covestro AG and deconsolidation of the Covestro Group
2. Impairment of goodwill and brand rights
3. Financial instruments – hedge accounting
4. Depiction of risks from product-related legal disputes
5. Adjustments to EBITDA for special items

Our presentation of these key audit matters is structured as follows:

a) Description (including reference to corresponding information in the consolidated financial statements)
b) Auditor's response

1. Sales of shares in Covestro AG and deconsolidation of the Covestro Group

a) Following the creation of the financial and legal autonomy of the MaterialScience segment in autumn 2015 and the subsequent IPO under the name of Covestro, at the end of 2016 the Bayer Group still held directly and indirectly via Bayer Pension Trust e. V. a total of 69.1 % of the shares in Covestro AG (of which 64.2 % were held directly). Due to three separate share sales transactions totaling 58.25 million or 28.7 % of the shares in Covestro AG for EUR 3.7bn and the contribution of 8 million shares or 4 % of the shares in Covestro AG worth EUR 0.5bn to Bayer Pension Trust e. V., the direct interest held by Bayer in Covestro AG fell to 31.5 % and the directly and indirectly held interest to 40.4 % by the beginning of September 2017. Since Bayer would still have held a majority at the Covestro AG Annual General Meeting at that time and was therefore able to exercise de facto control over the Covestro Group, these transfers of shares were accounted for as transactions between shareholders under IFRS 10 and the Covestro Group continued to be (fully) consolidated by Bayer. In all, the Bayer Group's equity increased by EUR 4.2bn as a result of these transactions, of which EUR 1.5bn were attributable to non-controlling interests.

Finally, at the end of September 2017 Bayer sold a further 13.94 million or 6.9 % of the shares in Covestro AG for EUR 1.0bn and entered into a relinquishment of control agreement with Covestro AG with effect from September 30, 2017. The consequence of this was the relinquishment of de facto control over the Covestro Group. Pursuant to IFRS 10, these two transactions were recognized economically as a single transaction. The Covestro Group was deconsolidated as of September 30, 2017 and has since been shown in the consolidated financial statements as a discontinued operation, in accordance with IFRS 5. Since Bayer currently directly holds 24.6 % and indirectly holds 33.5 % of the shares in Covestro AG and can continue to exercise significant influence over the Covestro Group, Covestro AG was included as of September 30, 2017 in the Bayer consolidated financial statements as an associated company with a carrying amount (fair value) of EUR 3.6bn according to the equity method. Bayer received income of EUR 3.1bn at Group level from the deconsolidation in 2017, in particular due to the recognition of the carrying amount at fair value. As of December 31, 2017, the equity value is virtually unchanged.

In our opinion, this issue was of particular significance due to the complexity of the underlying contractual agreements and the numerous material effects on the consolidated financial statements.

The Company's disclosures on the discontinued operation, the deconsolidation, and the first-time inclusion of the Covestro Group as an associate are set out in Sections 6.3 and 19 of the Notes to the consolidated financial statements.

b) We assessed whether Bayer had in fact continued to control the Covestro Group, despite the share sales up until the beginning of September, and thus ought to have continued to consolidate the Covestro Group. Moreover, by inspecting the relevant Board of Management resolutions and Board of Management and Supervisory Board minutes, we investigated whether the Board of Management had not already at the time of the individual share sales drawn up a plan that would have led to a loss of control over the Covestro Group, so that it would have been necessary, under IFRS 5, to report the Covestro Group as a discontinued operation even before September 30, 2017. We analyzed the sale of shares at the end of September 2017 and the conclusion of the relinquishment of control agreement to determine whether these can be treated as a single transaction under IFRS 10 and isolated from the earlier sales of shares up to mid-September.

We also assessed the relinquishment of control agreement as to whether the agreement fulfilled the company and stock corporation law requirements for the loss of control and thus for the deconsolidation of the Covestro Group and whether Covestro should have been deconsolidated as of September 30, 2017. We also examined whether the first-time classification as a discontinued operation as of September 30, 2017 was appropriate and that the presentation in the income statement and statements of cash flows as a discontinued operation is in accordance with IFRS 5.

Furthermore, we verified whether the deconsolidation was technically correct and whether the result of the deconsolidation was correctly determined and recognized in the accounts. We also performed audit procedures to ascertain whether the carrying amount of the investment in Covestro AG as an associated company and the provisional purchase price allocation made in this connection for the initial fair value measurement had been appropriately calculated.

2. Impairment of goodwill and brand rights

a) In the consolidated financial statements, an amount of EUR 14,751m (20 % of total Group assets) is reported under the balance sheet item "Goodwill". In addition, brand rights of EUR 6,412m (9 % of the Group's total assets) are reported under "Other intangible assets". The Company allocates goodwill to the strategic business units or groups of strategic business units within the Bayer Group. Regular impairment tests of goodwill and case-related impairment tests of brand rights compare the respective carrying amounts with their recoverable amounts. Fundamentally, the recoverable amount is determined on the basis of the fair value less costs to sell. The present value of future cash flows is used as a basis, since as a rule no market values are available for the individual strategic business units. The present value is determined using discounted cash flow models based on the Bayer Group's three-year operating plan drawn up by the legal representatives and acknowledged by the Supervisory Board and perpetuated with assumptions about long-term growth rates. Discounting is based on the weighted average cost of capital of the reporting segments concerned. The result of this valuation depends to a large extent on the estimates by the legal representatives of the future cash flows of the strategic business unit concerned and the discount rate used and is therefore fraught with considerable 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 Company's disclosures on goodwill and brand rights are contained in Section 4 and 17 of the Notes to the consolidated financial statements.

b) In our audit, among other things we reconstructed the methodology used to perform the impairment tests and assessed the calculation of the weighted cost of capital. We convinced ourselves of the appropriateness of the future cash inflows used in the valuation among other things by recording and critically assessing the underlying planning process. We also compared this information with the current budget from the three-year plan drawn up by the legal representatives and noted by the Supervisory Board, and reconciled it with general and industry-specific market expectations. For this, we also convinced ourselves that the costs of the Group functions included in the Corporate Functions and Consolidation segment of segment reporting were appropriately taken into account in the impairment test of the strategic business unit concerned. We studied intensively the parameters used to determine the discount rate applied and assessed the completeness and correctness of the calculation scheme. Owing to the material significance of goodwill, we further performed additional sensitivity analyses of our own for the strategic business units (carrying amount in comparison to the recoverable amount).

3. Financial instruments - hedge accounting

a) Bayer Group companies conclude a large number of different derivative financial instruments to hedge against currency, commodity price, and interest rate risks from ordinary business operations. The basis for this is the hedging policy prescribed by the legal representatives, which is documented in appropriate internal guidelines. The currency risk essentially results from sales revenues, sales and procurement transactions (in particular relating to raw materials), and financing transactions in foreign currencies. The aim of interest rate hedging is, on the one hand to achieve a reasonable relationship between variable and fixed interest rates and on the other to secure a low rate of interest for planned financing transactions. Derivative financial instruments are recognized at their fair value as of balance sheet date. The positive fair values of all derivative financial instruments used as hedges amounted to EUR 450m as of the closing date (i.e., 1 % of total Group assets), the negative fair values amounted to EUR 533m (representing 1 % of total Group assets). To the extent that the financial instruments used by the Bayer Group are effective hedges of future cash flows under hedge accounting in accordance with IAS 39, changes in fair value are recognized in equity until the due date of the hedged cash flow (effective portion) over the term of the hedge relationship. As of the balance sheet date, a cumulative amount of EUR -112m had been recognized outside profit or loss as expenses and income before taxes on income. In our view, these issues were of particular importance due to the high complexity and the great number of transactions, and the extensive accounting and reporting requirements of IAS 39 and IFRS 7.

The disclosures on hedge accounting are contained in Sections 4 and 30 of the Notes to the consolidated financial statements. Risk reporting with regard to the use of financial instruments is provided in the combined management report in Section 3.2.2.

b) Within the framework of our audit, and with the support of our internal specialists from the Financial Risk Solutions unit, we assessed the contractual and financial fundamentals of the financial instruments, among other things, and reconstructed the accounting including the effects on equity and earnings of the various hedging transactions. Jointly with our specialists, we also assessed the Company's internal control system in the area of derivative financial instruments, including the internal monitoring of compliance with the hedging policy, and reviewed the controls with regard to design, implementation, and effectiveness. Furthermore, while auditing the fair value measurement of the financial instruments, we also checked, on the basis of market data and within the framework of our risk assessment, the calculation methods of representatively selected samples and reconstructed the correct implementation of the methods in the system. In order to audit the effectiveness of the hedging transactions, we analyzed the various methods (prospective critical term match method; retrospective regression method) and, in the framework of our risk assessment, reconstructed their correct implementation in the system. With regard to the expected cash flows, we essentially assessed the past hedging ratios in retrospect.

4. Depiction of risks arising from product-related legal disputes

a) Bayer Group companies are involved in legal and out-of-court proceedings with public authorities, competitors, and other parties. These give rise to legal risks, in particular in the areas of product liability, competition and anti-trust law, patent law, tax law, and environmental protection.

Against the background of pending and expected product liability lawsuits relating to the product Mirena™, the Bayer Group had been served in the United States with lawsuits from approximately 2,900 (previous year: 2,600) (women) users of Mirena™ by January 30, 2018. In addition, by January 30, 2018, the Bayer Group had been served in the United States with about 22,000 claims (prior year: 16,400) for damages and punitive damages from users of the product Xarelto™. Moreover, by January 30, 2018, the Bayer Group had been served in Canada with ten lawsuits relating to Xarelto™, in each of which the admission of a class action has been applied for. By January 30, 2018, the Bayer Group had been served with lawsuits in the United States by about 16,100 (prior year 3,700) (women) users of Essure™ and two lawsuits in Canada, in each of which the admission of a class action has been applied for.

Whether a pending legal dispute makes the recognition of a provision to cover the risk necessary and, if so, to what extent, is determined to a large extent by estimates and assumptions by the legal repre-

sentatives. Against this background, and in view of the amount of the claims asserted, the above-mentioned product-related disputes of the Bayer Group were of particular significance from our point of view.

The disclosures about and explanations of the legal disputes mentioned are contained in Section 32 of the notes to the consolidated financial statements.

b) Within the framework of our audit, we assessed, among other things, the process established by the Company to ensure the recognition, the estimate of the outcome of the proceedings, and the accounting presentation of a legal dispute. Furthermore, we held regular discussions with the Company's internal legal department in order to be informed about current developments and the reasons that led to the corresponding estimates. The development of material legal disputes, including the estimates by the legal representatives with regard to the possible outcome of proceedings, was made available to us in writing by Bayer AG's internal legal department. As of the closing date, we furthermore obtained external attorney's certificates, which we compared with the risk assessment made by the legal representatives about the product-related disputes named in the "Description of the facts" section.

5. Adjustments to EBITDA for special items

a) For management and analysis purposes, the Bayer Group adduces EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization, and also impairment losses and reversals), adjusted for special items (by their nature or amount special effects). Adjustments to EBITDA amounting to EUR 725m are presented in Bayer AG's consolidated financial statements in continuing operations. Adjusted EBITDA from continuing operations are used by Bayer as a key financial performance indicator in its capital market communications. They are furthermore adduced as a degree of target achievement for the annual performance-based compensation of the employees of the Bayer Group. The adjustments to EBITDA were of particular significance within the framework of our audit, as they are made on the basis of the Bayer Group's internal accounting guideline and there is a risk that the legal representatives may exercise their discretionary powers one-sidedly.

The company's disclosures on the adjustments to EBITDA and the calculation thereof are presented in Section 5 of the notes to the consolidated financial statements and in Section 2.2 of the combined management report.

b) We reconstructed the calculation of adjusted EBITDA and critically examined the identification of the Group companies' special items taken into account by the legal representatives. For this we analyzed the composition of the adjustments in terms of the extent to which the individual components correspond to the corresponding guidelines for special items and were correctly excluded from adjusted EBITDA. At the same time, we examined, on the basis of the findings of our audit and the information provided by the legal representatives, whether the adjustments made were carried out in accordance with the definition and procedure presented in the explanations in the combined management report and in the segment reporting.

Other information

The legal representatives are responsible for the other information. The other information comprises:

- the Group's statement on business management pursuant to Section 289f and Section 315d HGB specified in Chapter 4.1 of the combined management report,
- the "Compliance" section of the Corporate Governance Report contained in Chapter 4.2 of the combined management report pursuant to No. 3.10 of the German Corporate Governance Code,
- all online annexes referred to in the combined management report and contained in the augmented online version of the Annual Report,
- assurance pursuant to Section 297 (2) Sentence 4 German Commercial Code (HGB) to the consolidated financial statements and assurance pursuant to Section 315 (1) Sentence 5 German Commercial Code (HGB) to the combined management report, and
- the remaining components of the annual report, with the exception of the audited consolidated financial statements and the combined management report and our Auditor's Report.

Our audit opinions on the consolidated financial statements and the combined management report do not extend to cover the other information, and accordingly we do not issue an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information and, in doing so, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, the combined man-agement report or our knowledge obtained in the audit, or
- otherwise appears to be substantially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this information, we are required to report on that fact. We have nothing to report in this regard.

Responsibilities of the legal representatives and the Supervisory Board for the consolidated financial statements and the combined management report

The legal representatives are responsible for the preparation of the consolidated financial statements which comply with IFRS as adopted by the EU and the supplementary requirements of the German legal regulations pursuant to Section 315e (1) German Commercial Code (HGB) in all material respects, so that the consolidated financial statements give a true and fair view of the net assets, financial position, and results of operations of the Group in accordance with these requirements. In addition, the legal representatives are responsible for the internal controls they have identified as necessary in order to enable the preparation of consolidated financial statements that are free from material misstatements, whether intentional or unintentional.

In preparing the consolidated financial statements, the legal representatives are responsible for assessing the Group's ability to continue as a going concern. Furthermore, they have the responsibility to disclose matters relating to the Group's ability to continue as a going concern, if relevant. In addition, they are responsible for using the going concern basis of accounting, unless the intention is to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

In addition, the legal representatives are responsible for the preparation of the combined management report, which as a whole provides a suitable view of the Group's position, is consistent with the consolidated financial statements in all material respects, complies with German legal regulations and suitably presents the opportunities and risks of future development. Furthermore, the legal representatives are responsible for such arrangements and measures (systems) which they have deemed necessary in order to enable the preparation of a combined management report in accordance with the applicable German legal regulations and to furnish sufficient and appropriate evidence for the statements 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 the combined management report.

Auditor's responsibilities for the audit of the consolidated financial statements and the 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 findings of the audit, is in accordance with the German legal regulations, and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and the combined management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with Section 317 German Commercial Code (HGB) and the EU Audit Regulation and generally accepted German standards for the audit of financial statements promulgated by the Institute of Public Auditors in Germany (IDW), and subject to supplementary compliance with ISA, will always detect a material misstatement when it exists. 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.

As part of an audit, we exercise professional judgement and maintain professional skepticism. We also

- identify and assess the risks of material misstatements in the consolidated financial statements and in the combined management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the overriding of internal controls.
- obtain an understanding of internal controls 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 opinion on the effectiveness of these systems.
- evaluate the appropriateness of the accounting policies used by the legal representatives and the reasonableness of accounting estimates and related disclosures made by the legal representatives.
- form a conclusion on the appropriateness of the legal representatives' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists relating to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that there is a material uncertainty, we are required to draw attention in our 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 opinion. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to continue as a going concern.
- evaluate the overall presentation, structure, and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements represent the underlying transactions and events in a manner such that the consolidated financial statements give a true and fair view of the net assets and financial position as well as the results of operations of the Group in accordance with IFRS as adopted by the EU and the supplementary requirements of German law pursuant to Section 315e (1) German Commercial Code (HGB).
- obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express opinions on the consolidated financial statements and the combined management report. We are responsible for the direction, supervision, and performance of the group audit. We remain solely responsible for our audit opinions.
- evaluate the consistency of the combined management report with the consolidated financial statements, its legal consistency, and the view provided of the Group's position.

› perform audit procedures on the forward-looking information presented by the legal representatives in the combined management report. On the basis of sufficient appropriate audit evidence, we particularly evaluate the significant assumptions underlying the forward-looking information by the legal representatives and evaluate the correct derivation of forward-looking information from these assumptions. We do not issue an independent opinion on the forward-looking information or on the underlying assumptions. There is a significant unavoidable risk that future events will differ materially from the forward-looking information.

We communicate with those charged with governance among other matters, on the planned scope and timing of the audit and significant audit findings, including any deficiencies in internal control, which we identify during our audit.

We also provide those charged with governance with a statement that we have complied with relevant ethical requirements regarding independence, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, 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 reporting period and are therefore the key audit matters. We describe these matters in our auditor's report on the consolidated financial statements unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

Other information pursuant to Article 10 EU Audit Regulation

We were appointed by the Annual General Meeting on April 28, 2017 to audit the consolidated financial statements. We were engaged by the Supervisory Board on June 1/28, 2017. We have been engaged continuously as the auditors of the consolidated financial statements of Bayer Aktiengesellschaft, Leverkusen, since the fiscal year 2017.

We confirm that the audit opinions contained in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 EU Audit Regulation ("Prüfungsbericht").

RESPONSIBLE AUDITOR

The auditor responsible for the audit is Prof. Dr. Frank Beine.

Munich, February 21, 2018

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

Heiner Kompenhans	Prof. Dr. Frank Beine
German Public Auditor	German Public Auditor

Independent Auditor's Report on a Limited Assurance Engagement on Sustainability Information

To: Bayer Aktiengesellschaft, Leverkusen

We performed a limited assurance engagement on the disclosures marked with "limited assurance" in the online annexes of the augmented online version of the Annual Report of Bayer Aktiengesellschaft, Leverkusen, (hereafter "the Company") for the period from January 1 through December 31, 2017 ("Annual Report 2017 – Augmented Version" hereafter "the Online Version").

Responsibility of the legal representatives

The legal representatives of Bayer Aktiengesellschaft are responsible for preparing the Online Version in accordance with the criteria stated in the G4 Sustainability Reporting Guidelines of the Global Reporting Initiative (GRI) (hereafter "the GRI Criteria") and for selecting the disclosures to be evaluated.

This responsibility of the Company's legal representatives includes the selection and application of appropriate sustainability reporting methods, and the making of assumptions about and estimates of individual sustainability disclosures that are appropriate in the circumstances. The legal representatives are furthermore responsible for the internal controls which they have determined are necessary to enable the preparation of an Online Version that is free from material misstatements, whether due to intentional or unintentional error.

Auditor's statements regarding independence and quality

We are independent of the entity in accordance with the provisions under German commercial law and professional requirements, and we have fulfilled our other ethical responsibilities in accordance with the relevant provisions within these requirements.

The Deloitte GmbH Wirtschaftsprüfungsgesellschaft applies the German national legal requirements and the German profession's pronouncements for quality control, in particular the by-laws regulating the rights and duties of Wirtschaftsprüfer and vereidigte Buchprüfer in the exercise of their profession (Berufssatzung für Wirtschaftsprüfer und vereidigte Buchprüfer) as well as the IDW Standard on Quality Control 1: Requirements for Quality Control in Audit Firms [IDW Qualitätssicherungsstandards 1: Anforderungen an die Qualitätssicherung in der Wirtschaftsprüferpraxis (IDW QS 1)], that are consistent with the International Standard on Quality Control 1 issued by the International Auditing and Assurance Standards Board (IAASB).

Responsibility of the Auditor

Our responsibility is to express a limited assurance conclusion on the disclosures marked with limited assurance in the Online Version, based on the assurance engagement we have performed.

We performed 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. Those standards require that we plan and perform the audit such that we are able to state with limited assurance that we have not become aware of any matters that cause us to believe that the disclosures in the Company's Online Version for the period from January 1 through December 31, 2017 have not been prepared in accordance with the relevant GRI criteria in all material respects. This does not mean that a separate audit opinion has been issued for each disclosure marked. In a limited assurance audit, the audit procedures performed are less in extent than for a reasonable assurance engagement and therefore a substantially lower level of assurance is obtained. The assurance procedures selected depend on the practitioner's professional judgement.

Within the framework of our audit, we performed the following audit procedures and other activities, including:

- Obtaining an understanding of the structure of the sustainability organization and the stakeholder engagement
- Inquiries of personnel involved in the compilation of the Online Version about the compilation process, the internal control system related to this process and about selected disclosures in the Online Version
- The identification of likely risks of material misstatements in the Online Version, under consideration of the GRI criteria
- The performance of on-site audit procedures to deepen the recording of processes and to analyze selected data at Bayer's locations Berlin, Bergkamen and Wuppertal (each Pharmaceuticals, Germany), Institute and Kansas City (each Crop Science, USA) as well as Dormagen, Leverkusen and Krefeld-Uerdingen (each Currenta, Germany)
- Remote assessments to analyze selected data for Bayer's sites Berkeley (Pharmaceuticals, USA) and Vapi (Crop Science, India)
- Analytical assessment of selected disclosures in the Online Version
- A comparison of disclosures with the corresponding data in the consolidated financial statements and the group management report
- An assessment of the presentation of the selected sustainability performance data
- The timing of the audit procedures performed

Audit opinion

On the basis of the audit procedures performed and the audit evidence obtained, nothing has come to our attention that causes us to believe that the disclosures marked with limited assurance in the Company's Online Version for the period from January 1 to December 31, 2017, have not been prepared, in all material aspects, in accordance with the relevant GRI criteria.

Intended use of the Report

We issue this Report on the basis of the engagement concluded with Bayer Aktiengesellschaft, Leverkusen. The limited assurance engagement was conducted for the purposes of Bayer Aktiengesellschaft and the Report is solely intended to inform Bayer Aktiengesellschaft as to the results of the assurance engagement.

Limitation of liability

The report is not intended to provide third parties with support in making (financial) decisions. Our responsibility lies solely toward Bayer Aktiengesellschaft and is also limited by the "General Terms and Conditions for Auditors and Auditing Firms" in the version dated January 1, 2017, as published by the Institut der Wirtschaftsprüfer in Deutschland e. V. We assume no responsibility towards third parties.

Munich, February 21, 2018

Deloitte GmbH
Wirtschaftsprüfungsgesellschaft

[Heiner Kompenhans]
German Public Auditor

[Prof. Dr. Frank Beine]
German Public Auditor

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, 2017, 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:

Werner Wenning
Leverkusen, Germany
(born October 21, 1946)

Chairman of the Supervisory Board effective October 2012

Chairman of the Supervisory Board of Bayer AG

Memberships on other supervisory boards:

- Henkel Management AG
- Siemens AG (Vice Chairman)

Memberships in comparable supervising bodies of German or foreign corporations:

- Henkel AG & Co. KGaA (Shareholders' Committee)

Attendance at Supervisory Board and committee meetings: 20 of 20

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

Memberships on other supervisory boards:

- Bayer Pharma AG (until January 2017)

Attendance at Supervisory Board and committee meetings: 15 of 15

Dr. Paul Achleitner
Munich, Germany
(born September 28, 1956)

Member of the Supervisory Board effective April 2002

Chairman of the Supervisory Board of Deutsche Bank AG

Memberships on other supervisory boards:

- Daimler AG
- 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: 13 of 14

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 meetings: 8 of 9

Dr. Norbert W. Bischofberger
Hillsborough, U.S.A.
(born January 10, 1956)

Member of the Supervisory Board effective April 2017

Executive Vice President Research & Development and Chief Scientific Officer of Gilead Sciences, Inc.

Memberships in comparable supervising bodies of German or foreign corporations:

- InCarda Therapeutics, Inc. (Board of Directors)

Attendance at Supervisory Board and committee meetings: 6 of 6

Dr. Clemens Börsig
Frankfurt am Main, Germany
(born July 27, 1948)

Member of the Supervisory Board until April 2017

Member of various supervisory boards

Memberships on other supervisory boards:

- Daimler AG
- Linde AG

Memberships in comparable supervising bodies of German or foreign corporations:

- Emerson Electric Co. (Board of Directors)

Attendance at Supervisory Board meetings: 3 of 3

André van Broich
Dormagen, Germany
(born June 19, 1970)

Member of the Supervisory Board effective April 2012

Chairman of the Bayer Group Works Council (effective September 2017)

Chairman of the Works Council of the Dormagen site

Memberships on other supervisory boards:

- Bayer CropScience AG (until January 2017)

Attendance at Supervisory Board and committee meetings: 14 of 14

Thomas Ebeling
Muri bei Bern, Switzerland
(born February 9, 1959)

Member of the Supervisory Board effective April 2012

Chief Executive Officer of ProSiebenSat.1 Media SE (until February 2018)

Memberships on other supervisory boards:

- GfK SE (effective April 2017)

Memberships in comparable supervising bodies of German or foreign corporations:

- Cullinan Oncology, LLC (Board of Directors) (effective November 2017)
- Lonza Group AG (until April 2017)

Attendance at Supervisory Board meetings: 7 of 9

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: 8 of 8

Johanna W. (Hanneke) Faber
Amstelveen, Netherlands
(born April 19, 1969)

Member of the Supervisory Board effective April 2016

Chief E-Commerce and Innovation Officer and Member of the Executive Committee of Koninklijke Ahold Delhaize N.V. (until December 2017)

President Europe at Unilever N.V./plc (effective January 2018)

Attendance at Supervisory Board meetings: 6 of 9

Dr.-Ing. Thomas Fischer
Krefeld, Germany
(born August 27, 1955)

Member of the Supervisory Board until April 2017

Chairman of the Managerial Employees' Committee of Covestro Deutschland AG

Memberships on other supervisory boards:

- Covestro AG
- Covestro Deutschland AG

Attendance at Supervisory Board and committee meetings: 5 of 5

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. (formerly QuintilesIMS Holdings, Inc.) (Board of Directors) (effective July 2017)

Attendance at Supervisory Board meetings: 6 of 6

Heike Hausfeld
Leverkusen, Germany
(born September 19, 1965)

Member of the Supervisory Board effective April 2017

Chairwoman of the Works Council of the Leverkusen site

Memberships on other supervisory boards:

- Bayer Business Services GmbH (Vice Chairwoman)

Attendance at Supervisory Board and committee meetings: 9 of 9

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: 8 of 9

Yüksel Karaaslan
Hohen Neuendorf, Germany
(born March 1, 1968, deceased June 4, 2017)

Member of the Supervisory Board until June 2017

Chairman of the Bayer Group Works Council

Vice Chairman of the Bayer Central Works Council

Chairman of the Works Council of the Berlin site

Memberships on other supervisory boards:

- Bayer Pharma AG (Vice Chairman) (until January 2017)

Attendance at Supervisory Board and committee meetings: 6 of 7

Petra Kronen
Krefeld, Germany
(born August 22, 1964)

Member of the Supervisory Board until September 2017

Chairwoman of the Central Works Council of Covestro

Chairwoman of the Works Council of Covestro of the Uerdingen site

Memberships on other supervisory boards:

- Covestro AG (Vice Chairwoman)
- Covestro Deutschland AG (Vice Chairwoman)

Attendance at Supervisory Board and committee meetings: 8 of 8

Frank Löllgen
Cologne, Germany
(born June 14, 1961)

Member of the Supervisory Board effective November 2015

North Rhine District Secretary of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Evonik Industries AG
- IRR-Innovationsregion Rheinisches Revier GmbH

Attendance at Supervisory Board and committee meetings: 13 of 13

Prof. Dr. Wolfgang Plischke
Aschau im Chiemgau, Germany
(born September 15, 1951)

Member of the Supervisory Board effective April 2016

Independent consultant

Memberships on other supervisory boards:

- Evotec AG (Chairman)

Attendance at Supervisory Board and committee meetings: 15 of 15

Sue H. Rataj
Sebastopol, U.S.A.
(born January 8, 1957)

Member of the Supervisory Board until April 2017

Member of the Board of Directors of Cabot Corporation, Boston, U.S.A.

Member of the Board of Directors of Agilent Technologies Inc., Santa Clara, U.S.A.

Attendance at Supervisory Board meetings: 3 of 3

Petra Reinbold-Knape
Gladbeck, Germany
(born April 16, 1959)

Member of the Supervisory Board effective April 2012

Member of the Executive Committee of the German Mining, Chemical and Energy Industrial Union

Memberships on other supervisory boards:

- Lausitz Energie Bergbau AG (Vice Chairwoman)
- Lausitz Energie Kraftwerk AG (Vice Chairwoman effective March 2017)

Attendance at Supervisory Board and committee meetings: 11 of 11

Detlef Rennings
Krefeld, Germany
(born April 29, 1965)

Member of the Supervisory Board effective June 2017

Chairman of the Central Works Council of CURRENTA

Chairman of the Works Council of CURRENTA of the Uerdingen site

Memberships on other supervisory boards:

- Currenta Geschäftsführungs-GmbH

Attendance at Supervisory Board meetings: 4 of 4

Sabine Schaab
Wuppertal, Germany
(born June 25, 1966)

Member of the Supervisory Board effective October 2017

Vice Chairwoman of the Works Council of the Elberfeld site

Attendance at Supervisory Board and committee meetings: 3 of 3

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: 8 of 9

Dr. Klaus Sturany*
Ascona, Switzerland
(born October 23, 1946)

Member of the Supervisory Board effective April 2007

Member of various supervisory boards

Memberships on other supervisory boards:

- Hannover Rück SE (Vice Chairman)

Attendance at Supervisory Board and committee meetings: 12 of 13

Heinz Georg Webers
Bergkamen, Germany
(born December 27, 1959)

Member of the Supervisory Board until April 2017

Chairman of the Bayer European Forum

Chairman of the Works Council of the Bergkamen site

Memberships on other supervisory boards:

- Bayer Pharma AG (until January 2017)

Attendance at Supervisory Board meetings: 3 of 3

Prof. Dr. Dr. h.c. Otmar D. Wiestler
Berlin, Germany
(born November 6, 1956)

Member of the Supervisory Board effective October 2014

President of the Helmholtz Association of German Research Centres

Attendance at Supervisory Board and committee meetings: 10 of 11

* Expert member pursuant to Section 100, Paragraph 5 of the German Stock Corporation Act (AktG)

Standing committees of the Supervisory Board of Bayer AG (as at December 31, 2017)

Presidial Committee / Mediation Committee
Wenning (Chairman), Achleitner, Reinbold-Knape, Zühlke

Audit Committee
Sturany* (Chairman), Elsner, Löllgen, Plischke, Wenning, Zühlke

Human Resources Committee
Wenning (Chairman), Achleitner, Hausfeld, van Broich

Nominations Committee
Wenning (Chairman), Achleitner

Innovation Committee
Plischke (Chairman), Bischofberger, van Broich, Reinbold-Knape, Schaab, Wenning, Wiestler, Zühlke

Board of Management

Members of the Board of Management held offices as members of the supervisory board or a comparable supervising body of the corporations listed (as at December 31, 2017):

Werner Baumann
(born October 6, 1962)

Chairman

Member of the Board of Management effective January 1, 2010, appointed until April 30, 2021

Liam Condon
(born February 27, 1968)

Member of the Board of Management effective January 1, 2016, appointed until December 31, 2018

Johannes Dietsch
(born January 2, 1962)

Member of the Board of Management effective September 1, 2014, appointed until May 31, 2018

- Bayer Business Services GmbH (Chairman)
- Bayer CropScience AG (Chairman) (until February 2017)
- Covestro AG
- Covestro Deutschland AG

Dr. Hartmut Klusik
(born July 30, 1956)

Member of the Board of Management effective January 1, 2016, appointed until December 31, 2018

Labor Director

- Bayer Pharma AG (Chairman) (until February 2017)
- Currenta Geschäftsführungs-GmbH (Chairman)

Kemal Malik
(born September 29, 1962)

Member of the Board of Management effective February 1, 2014, appointed until January 31, 2022

Erica Mann
(born October 11, 1958)

Member of the Board of Management effective January 1, 2016, appointed until March 31, 2018

Dieter Weinand
(born August 16, 1960)

Member of the Board of Management effective January 1, 2016, appointed until December 31, 2018

- HealthPrize Technologies LLC (Board of Directors)

)

Organization Chart

C 1

Werner Baumann
Chairman

M. Arnold
Corporate Office

T.-P. Hausner
Strategy

O. Maier
Investor Relations

M. Preuss
Communications and Public Affairs

F. Rittgen
Mergers, Licencing & Acquisitions

R. Schwarz
Internal Audit

Johannes Dietsch[1]
Finance

M. Baum
Risk Management

B.-P. Bier
Accounting & Taxes

V. Hahn
Regional Coordination

G. Harnier
Law, Patents & Compliance

D. Hartert
Business Services

P. Müller
Finance

G. Schildmeyer
Corporate Controlling

T. Udesen
Procurement

Hartmut Klusik*
Human Resources, Technology & Sustainability

A. Günther
Human Resources & Organization

P.-G. Heiden
Corporate Quality

D. Heinz
Corporate Technology & Manufacturing

R. Heumann
Corporate Supply Chain

G. Hilken
Currenta

A. Knors
Engineering & Technology

K. van Laak
Corporate Health, Safety & Sustainability

Kemal Malik
Innovation

A. Bouchon
Bayer Lifescience Center

M. Lessl
Corporate Innovation and Research & Development

* Labor Director
[1] From June 1, 2018, Wolfgang Nickl
[2] Europe / Middle East / Africa
[3] Asia / Pacific
[4] From April 1, 2018, Heiko Schipper

C 1 (continued)

Dieter Weinand
Pharmaceuticals

- **C. Brunn**
  Commercial Operations Americas
- **W. Carius**
  Product Supply
- **M. Devoy**
  Chief Medical Officer
- **R. Franzen**
  Commercial Operations EMEA[2]
- **S. Guth**
  Strategic Marketing
- **W. Jiang**
  Commercial Operations China & APAC[3]
- **R. LaCaze**
  Oncology
- **J. Möller**
  Research & Development
- **H. Prinz**
  Commercial Operations Japan
- **J. Triana**
  Finance

Erica Mann[4]
Consumer Health

- **N. Bartner**
  Commercial Operations North America
- **S. James**
  Innovation & Development
- **J. Koelink**
  Product Supply
- **O. Mauroy-Bressier**
  Finance
- **S. Meyer**
  Commercial Operations Europe/Middle East/Africa
- **A. Sanchez**
  Commercial Operations Latin America
- **G. Vreeken**
  Strategic Marketing
- **L. Yuen**
  Commercial Operations Asia/Pacific

Liam Condon
Crop Science

- **J. Applegate**
  Environmental Science
- **D. Backhaus**
  Product Supply
- **M. Dawkins**
  Post-Merger Integration
- **M. Kremer**
  Crop Strategies & Portfolio Management
- **T. Menne**
  Digital Farming
- **B. Naaf**
  Business Affairs & Communications
- **A. Percy**
  Research & Development
- **M. Reichardt**
  Agricultural Commercial Operations
- **M. A. Schulz**
  Finance
- **F. Terhorst**
  Pre-Merger Planning

- **D. Ehle**
  Animal Health

As of March 1, 2018

G4 Content Index of the Global Reporting Initiative (GRI) with the 10 Principles of the U.N. Global Compact

For fiscal 2017 we are once again applying the GRI G4 Guidelines that are valid until June 30, 2018. We have again drafted our report in accordance with the "comprehensive" option of the Guidelines. If there is insufficient information available on a GRI indicator, we have explained this. The detailed GRI Content Index additionally includes the corresponding UNGC principles and the assignment of our areas of activity to the GRI aspects. Moreover, we indicate whether our scope to exercise influence lies within or outside the company (GRI G4–19, G4–20, G4–21).

For the implementation of the GRI Materiality Disclosure Service the GRI had access to the "Annual Report 2017 – Augmented Version." The correct positioning of the "G4 Materiality Disclosures" (G4-17 – G4-27) was confirmed by the GRI.

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20	GRI aspect limitation G4-21
	General Standard Disclosures					**within**	**outside**
	Strategy and Analysis						
	G4–1	Statement from the most senior decision-maker	1-7				
	G4–2	Key impacts, risks and opportunities concerning sustainability	43, 50–55, 56–58, 62, 94, 173				
	Organizational Profile						
	G4–3	Name of the organization	46				
	G4–4	Primary brands, products and services	43, 46–47, 52				
	G4–5	Location of the organization's headquarters	44				
	G4–6	Countries with significant operations	44–46				
	G4–7	Nature of ownership and legal form	39, 48				
	G4–8	Markets served	44–45, 102, 102–103				
	G4–9	Scale of the organization	Cover 3 (front inside cover), 44–45, 79, 99, 208, 210				
6	G4–10	Employees by employment type, gender and region	80–81, 86				

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	GRI aspect limitation G4-21 outside
	General Standard Disclosures						
3	G4–11	Percentage of employees covered by collective bargaining agreements	88				
	G4–12	Description of the supply chain	93				
	G4–13	Significant changes during the reporting period	2, 46, 48, 62, 64, 131				
	G4–14	Implementation of the precautionary principle	107				
	G4–15	External initiatives that the organization endorses	40, 51, 56, 61, 85, 90, 94 – 95, 105, 107, 125				
	G4–16	Significant memberships in industry and business associations	56, 60, 85, 107, 109				
	Identified Material Aspects and Boundaries						
	G4–17	Entities included in the consolidated financial statements	42, 237				
	G4–18	Process for defining the report content	57; www.bayer.com/materiality				
	G4–19	Material Aspects identified	328 – 337; www.bayer.com/areas-of-activity				
	G4–20	Aspect Boundaries within the organization	328 – 337; www.bayer.com/areas-of-activity				
	G4–21	Aspect Boundaries outside the organization	328 – 337; www.bayer.com/areas-of-activity				
	G4–22	Restatements of information provided in previous reports	42, 48				
	G4–23	Significant changes in the Scope and Aspect Boundaries	57; www.bayer.com/areas-of-activity				
	Stakeholder Engagement						
	G4–24	Stakeholder groups engaged	58 – 59				
	G4–25	Identification and selection of stakeholders	58 – 59				
	G4–26	Approach to stakeholder engagement and frequency	38 – 39, 57 – 62, 64, 83 – 84, 97				
	G4–27	Key topics and concerns raised through stakeholder engagement and response	38 – 39, 57, 61				

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20	GRI aspect limitation G4-21
	General Standard Disclosures					**within**	**outside**
	Report Profile						
	G4– 28	Reporting period	42				
	G4–29	Date of most recent previous report	Annual Report: 2016-02-22				
	G4–30	Reporting cycle	Annually				
	G4–31	Contact point for questions regarding the report	Cover 4 (back inside cover)				
	G4–32	"In accordance" option with GRI and Content Index chosen	40, 324 – 337				
	G4–33	External verification of the report	35, 42, 308 – 315, 316 – 318				
	Governance						
	G4–34	Governance structure, incl. committees of the highest governance body	28 – 30, 32 – 34, 182, 184, 186 – 187				
	G4–35	Process for delegating authority for economic, environmental and social topics	57, 184, 186 – 188				
	G4–36	Executive-level position with responsibility for economic, environmental and social topics	28 – 29, 31, 33, 57, 89, 104, 167 – 169, 184, 188				
	G4–37	Processes for consultation between stakeholders and the highest governance body	34, 38 – 39, Cover 4 (back inside cover); www.bayer.com/en/corporate-governance.aspx				
	G4–38	Composition of the highest governance body and its committees	33, 183, 185 – 186				
	G4–39	Independence of the Chair of the highest governance body	30, 186				
	G4–40	Nomination and selection processes for the highest governance body and its committees	34, 183 – 187				
	G4–41	Process for avoiding conflicts of interest	183 – 185, 187 – 188				
	G4–42	Highest governance body's role concerning strategy and goals	31, 56, 184				
	G4–43	Measures taken concerning the highest governance body's knowledge in sustainability issues	33				

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20	G4-21
	General Standard Disclosures					**within**	**outside**
	G4–44	Evaluation of the highest governance body's performance concerning sustainability	30, 33				
	G4–45	Highest governance body's role concerning sustainability impacts, risks, and opportunities	171, 188				
	G4–46	Highest governance body's role concerning the effectiveness of the risk management	31, 33,168 – 169, 186 – 187				
	G4–47	Frequency of the highest governance body's review of sustainability impacts, risks, and opportunities	33, 168, 170 – 171				
	G4–48	Highest committee that formally reviews and approves the sustainability report	35, 41, 57, 190				
	G4–49	Process for communicating critical concerns to the highest governance body	34, 38 – 39, 189; www.bayer.com/asm				
	G4–50	Critical concerns that were communicated to the highest governance body	31; www.bayer.com/asm				
	G4–51	Remuneration policies for the highest governance body and senior executives	43, 188, 191 – 195, 202				
	G4–52	Process for determining remuneration	31, 191, 202				
	G4–53	Stakeholders' views regarding remuneration	191, 202; www.bayer.com/asm				
	G4–54	Ratio of the highest annual total compensation to the median annual total compensation		Not available: we do not consider this compensation detail to be of informative value for the evaluation of the appropriateness of our compensation structures. We report on these in detail in the section "Competitive compensation and variable pay" and in our Compensation Report.			
	G4–55	Ratio of percentage increase in the highest annual total compensation		Not available: we do not consider this compensation detail to be of informative value for the evaluation of the appropriateness of our compensation structures. We report on these in detail in the section "Competitive compensation and variable pay" and in our Compensation Report.			

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20	G4-21
	General Standard Disclosures					**within**	**outside**
	Ethics and Integrity						
10	G4–56	Values, principles, standards and norms of behavior	43, 57, 83, 89, 188				
10	G4–57	Mechanisms for seeking advice on ethical and lawful behavior	189				
10	G4–58	Mechanisms for reporting concerns about unethical or unlawful behavior	89, 103, 188–189				
	Specific Standard Disclosures G4-19					**within**	**outside**
	Economic						
					Employee relations & development	X	
					Product and process innovation	X	X
7	Aspect: Economic Performance – Management Approach		49, 91		Environmental protection / resource efficiency	X	X
	G4-EC1	Direct economic value created and distributed	49–50, 86, 90–91, 249				
7	G4-EC2	Financial implications and other risks and opportunities due to climate change	178; www.bayer.com/CDP-Climate				
	G4-EC3	Coverage of benefit plan obligations	86, 88,176, 269–272, 272–274, 277				
	G4-EC4	Financial assistance received from government	64				
6	Aspect: Market Presence – Management Approach		84		Employee relations & development	X	
6	G4-EC5	Ratios of standard entry level wage compared to local minimum wage		We align our compensation with local market conditions in Emerging Markets and developing countries. Furthermore, in keeping with our human rights position, we pursue the goal of paying adequate salaries that ensure a suitable standard of living for our employees and their families. In all Emerging Markets where we are active, the lowest salary paid by Bayer is at least in line with the applicable minimum wage and in most cases higher. We therefore do not report on the margin between standard entry salary according to gender and local minimum wage.			
6	G4-EC6	Proportion of senior management hired from the local community	84				

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	GRI aspect limitation G4-21 outside
	Specific Standard Disclosures G4-19					**within**	**outside**
					Sustainable food supply		X
	Aspect: Indirect Economic Impacts – Management Approach		49		Access to health care		X
	G4-EC7	Infrastructure investments and services provided	51 – 52, 91, 98				
	G4-EC8	Indirect economic impacts	49				
	Aspect: Procurement Practices – Management Approach		93		Supplier management		X
	G4-EC9	Proportion of spending on local suppliers	42, 93, 338 – 339				
	Environmental						
7, 8	Aspect: Materials – Management Approach		94, 99, 104 – 105, 120, 128		Environmental protection / resource efficiency	X	X
7, 8	G4-EN1	Materials used by weight or volume	94	We do not report on the weight and volume of the materials used. This information constitutes a business secret. On account of our product portfolio we additionally do not consider this information to be meaningful.			
8	G4-EN2	Percentage of materials used that are recycled input materials		We do not provide any information on volumes relating to the total material use of secondary raw materials since this also constitutes a business secret. We do provide information on production-, material- and, where possible, product-related recycling.			
7, 8, 9	Aspect: Energy – Management Approach		55, 99, 104 – 105, 120 – 122		Environmental protection / resource efficiency	X	X
7, 8	G4-EN3	Energy consumption within the organization	120 – 121				
	G4-EN4	Energy consumption outside of the organization	121	Such energy consumption is contained in the details of greenhouse gas emissions for Scope 3, which we publish in the CDP Report (www.bayer.com/CDP-Climate).			
8	G4-EN5	Energy intensity	121 – 124				
8, 9	G4-EN6	Reduction of energy consumption	121 – 124				
8, 9	G4-EN7	Reductions in energy requirements of products and services		We do not consider this indicator to be applicable to our product portfolio as a Life Science company. Data are therefore not available.			
7; 8	Aspect: Water – Management Approach		55, 99, 104 – 105, 120, 124 – 125		Environmental protection / resource efficiency	X	X
7, 8	G4-EN8	Total water withdrawal by source	125 – 126				
8	G4-EN9	Water resources significantly affected	125; www.bayer.com/CDP-Water				
8	G4-EN10	Water recycled and reused	125				

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	G4-21 outside
	Specific Standard Disclosures G4-19						
8	Aspect: Biodiversity – Management Approach		99, 109		Environmental protection / resource efficiency	X	X
8	G4-EN11	Operational sites in protected areas	99	We use our site register to record all site-related data (including size). For confidentiality reasons, we do not publish any size data on our sites, for example.			
8	G4-EN12	Impacts on protected areas or areas of high biodiversity value	109				
7, 8, 9	Aspect: Emissions – Management Approach		55, 99, 104 – 105, 120, 122 – 123		Environmental protection / resource efficiency	X	X
7, 8	G4-EN15	Direct greenhouse gas (GHG) emissions (Scope 1)	122 – 123				
7, 8	G4-EN16	Energy indirect greenhouse gas (GHG) emissions (Scope 2)	122 – 123				
7, 8	G4-EN17	Other indirect greenhouse gas (GHG) emissions (Scope 3)	122 – 123; www.bayer.com/CDP-Climate				
8	G4-EN18	Greenhouse gas (GHG) emissions intensity	123				
8, 9	G4-EN19	Reduction of greenhouse gas (GHG) emissions	122, 127				
7, 8	G4-EN20	Emissions of ozone-depleting substances (ODS)	124				
7, 8	G4-EN21	NOx, SOx and other significant air emissions	124				
8	Aspect: Effluents and Waste – Management Approach		99, 104 – 105, 112, 120, 124 – 126, 128, 177		Environmental protection / resource efficiency	X	X
8	G4-EN22	Total water discharge by quality and destination	126				
8	G4-EN23	Total weight of waste by type and disposal method	127				
8	G4-EN24	Total number and volume of significant spills	119 – 120, 124				
8	G4-EN25	Handling of hazardous waste	127	Waste transported across borders is recorded in Europe in line with legal regulations and reported to the responsible authorities.			
8	G4-EN26	Water bodies significantly affected by discharges of water and runoff	99, 124 – 125, 126	We give detailed information on all water-related issues in our CDP Water Report (www.bayer.com/CDP-Water)			

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	G4-21 outside
	Specific Standard Disclosures G4-19					**within**	**outside**
					Product and process innovation	X	X
					Product stewardship	X	X
7, 8, 9	Aspect: Products and Services – Management Approach		106, 108, 112, 113, 115, 120, 176		Environmental protection / resource efficiency	X	X
7, 8, 9	G4-EN27	Mitigation of environmental impacts of products and services	64, 112 – 113, 115				
8	G4-EN28	Reclaimed products and packaging	128				
8	Aspect: Compliance – Management Approach		55, 89, 103 – 104, 169,177, 182, 187 – 189		Business ethics	X	X
8	G4-EN29	Fines and sanctions for noncompliance with environmental regulations	229 – 230, 278, 296 – 297, 300				
					Safety	X	X
8	Aspect: Transport – Management Approach		101		Environmental protection / resource efficiency	X	X
8	G4-EN30	Significant environmental impacts of transports	101, 122				
8	Aspect: Supplier Environmental Assessment – Management Approach		54, 93 – 96, 101		Supplier management		X
8	G4-EN32	Percentage of new suppliers that were screened using environmental criteria	95	We do not report on the percentage of new suppliers screened using environmental criteria because these data are not available. We report on the procedure used for assessment.			
8	G4-EN33	Significant negative environmental impacts in the supply chain and actions taken	95 – 96	We do not report in detail on the negative environmental impact determined during supplier assessment. We give details on the areas in which essential impacts were identified and corrective measures were defined.			
8	Aspect: Environmental Grievance Mechanisms – Management Approach		189		Business ethics	X	X
8	G4-EN34	Grievances about environmental impacts	189	We do not report on the number of grievances with respect to negative environmental impact. We report on the total number of notifications registered with the compliance hotline. We internally record the precise reason for the grievance, track how it is followed up and take corresponding action in line with our corporate policy. More detailed information on this would constitute a business secret.			

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	G4-21 outside
	Specific Standard Disclosures G4-19					**within**	**outside**
	Labor Practices and Decent Work						
6	Aspect: Employment – Management Approach		79, 86		Employee relations & development	X	
6	G4-LA1	New employee hires and employee turnover	81 – 82				
	G4-LA2	Benefits provided to full-time employees	85				
6	G4-LA3	Return to work and retention rates after parental leave	86 – 87				
3	Aspect: Labor / Management Relations – Management Approach		83 – 84		Employee relations & development	X	
3	G4-LA4	Minimum notice period(s) regarding operational changes	83				
1, 6	Aspect: Occupational Health and Safety – Management Approach		55, 79, 87, 99, 104 – 105, 116 – 117, 177, 188		Safety	X	X
	G4-LA5	Percentage of total workforce represented in health and safety committees		We do not report on the percentage of the total workforce represented in health and safety committees as these data are not globally available. We plan to record these data in the future.			
	G4-LA6	Injuries, occupational diseases, lost days and work-related fatalities	116 – 117	We do not report on occupational injuries by gender, as these data have to be collected in certain regions anonymously. It is important for us to have classification by incident type and a detailed analysis of the causes of the individual incidents.			
	G4-LA7	Workers with high incidence or risk of diseases	116				
	G4-LA8	Health and safety topics covered in formal agreements with trade unions	87				
6	Aspect: Training and Education – Management Approach		79, 82, 174		Employee relations & development	X	
6	G4-LA9	Average hours of training	83				
	G4-LA10	Programs that support the continued employability of employees	62, 82, 87, 117; www.bayer.com/training				
6	G4-LA11	Percentage of employees receiving regular performance and career development reviews	83				
1, 6	Aspect: Diversity and Equal Opportunity – Management Approach		55, 79, 83 – 85, 174, 183 – 185		Employee relations & development	X	

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	G4-21 outside
	Specific Standard Disclosures G4-19						
6	G4-LA12	Composition of governance bodies and breakdown of employees by aspects of diversity	28–29, 80–81, 84–85, 183, 185–186, 319–322	We do not report on minorities, as these data may not be recorded in some countries on grounds of protection of personal rights.			
6	Aspect: Equal Remuneration for Women and Men – Management Approach		85		Employee relations & development	X	
6	G4-LA13	Ratio of basic salary and remuneration of women to men	85	We do not report quantitatively on the ratio of the basic salary and compensation of women to men. Male and female employees at Bayer receive equal compensation. It is awarded on the basis of qualifications and responsibility.			
	Aspect: Supplier Assessment for Labor Practices – Management Approach		54, 89, 93–96, 101		Supplier management		X
	G4-LA14	Percentage of new suppliers that were screened using labor practices criteria	95	We do not report on the percentage of new suppliers screened using labor practices criteria because these data are not available. We report on the procedure used for assessment.			
	G4-LA15	Significant negative impacts for labor practices in the supply chain and actions taken	89, 95–96	We do not report in detail on the negative impact on labor practices determined during supplier assessment. We give details on the areas in which essential impacts were identified and corrective measures were defined.			
	Aspect: Labor Practices Grievance Mechanisms – Management Approach		89, 189		Business ethics	X	X
	G4-LA16	Grievances about labor practices	189	We do not report on the number of grievances with respect to the negative impact on labor practices. We report on the total number of notifications registered with the compliance hotline. We internally record the precise reason for the grievance, track how it is followed up and take corresponding action in line with our corporate policy. More detailed information on this would constitute a business secret.			
	Human Rights						
6	Aspect: Non-discrimination – Management Approach		83, 89, 188		Business ethics Employee relations & development	X X	X
6	G4-HR3	Incidents of discrimination and corrective actions taken	89, 189	We do not report on the number of incidents of discrimination. We report on the total number of notifications registered with the compliance hotline. We internally record the precise reason for the grievance, track how it is followed up and take corresponding action in line with our corporate policy. More detailed information on this would constitute a business secret.			

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	G4-21 outside
	Specific Standard Disclosures G4-19						
2, 3	Aspect: Freedom of Association and Collective Bargaining – Management Approach		88 – 89, 94 – 95, 188		Employee relations & development	X	
					Supplier management	X	X
2, 3	G4-HR4	Operations and suppliers identified in which the right to exercise freedom of association may be violated or at risk, and measures taken	89, 95 – 96				
2, 5	Aspect: Child Labor – Management Approach		83, 89, 94 – 95, 97 – 98, 188		Employee relations & development	X	
					Supplier management	X	X
2, 5	G4-HR5	Operations and suppliers having significant risk for incidents of child labor, and measures taken	89, 95 – 96, 98 – 99				
2, 4	Aspect: Forced or Compulsory Labor – Management Approach		83, 89, 94 – 95, 188		Employee relations & development	X	
					Supplier management	X	X
2, 4	G4-HR6	Operations and suppliers having significant risk for incidents of forced or compulsory labor, and measures taken	89, 95, 96				
1	Aspect: Security Practices – Management Approach		89		Employee relations & development	X	
					Business ethics	X	X
1	G4-HR7	Percentage of security personnel trained in the field of human rights	89				
2	Aspect: Supplier Human Rights Assessment – Management Approach		54, 83, 89, 93 – 96, 101		Supplier management		X
2	G4-HR10	Percentage of new suppliers that were screened using human rights criteria	95	We do not report on the percentage of new suppliers screened using human rights criteria because these data are not available. We report on the procedure used for assessment.			
2	G4-HR11	Significant negative human rights impacts in the supply chain and actions taken	89, 95 – 96	We do not report in detail on the negative impact on human rights determined during supplier assessment. We give details on the areas in which essential impacts occurred and corrective measures were defined.			

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	GRI aspect limitation G4-21 outside
	Specific Standard Disclosures G4-19					**within**	**outside**
1	Aspect: Human Rights Grievance Mechanisms – Management Approach		89, 189		Business ethics	X	X
1	G4-HR12	Grievances about human rights impacts	89, 189	We do not report on the number of formal grievances with respect to human rights violations, but on the total number of notifications registered with the compliance hotline. We internally record the precise reason for the grievance and take corresponding action in line with our corporate policy. More detailed information on this would constitute a business secret.			
	Society						
1	Aspect: Local Communities – Management Approach		55, 58, 61–62, 99–101, 104–105, 116–119, 124, 177, 188		Safety	X	X
					Stakeholder engagement / partnering	X	X
					Societal engagement	X	X
1	G4-SO1	Percentage of operations with implemented local community engagement, impact assessments and development programs	58, 60–61				
1	G4-SO2	Operations with actual and potential negative impacts on local communities	100, 117–119, 124				
10	Aspect: Anti-corruption – Management Approach		55, 103–104, 169, 177, 187–189		Business ethics	X	X
10	G4-SO3	Percentage of operations assessed for risks related to corruption and risks identified	188	We do not report such risks in relation to operations but in relation to sales. Complete coverage is key in compliance / anti-corruption in the first instance. Areas at risk are monitored more frequently than others.			
10	G4-SO4	Communication and training on anti-corruption	189	We do not report quantitatively on training for the Board of Management, Supervisory Board and business partners. Anti-corruption training is performed globally, we therefore do not disclose such information explicitly according to region.			
10	G4-SO5	Confirmed incidents of corruption and actions taken	189	We do not report on the number of confirmed incidents of corruption. We report on the total number of notifications registered with the compliance hotline. We internally record the precise reason for the grievance, track how it is followed up and take corresponding action in line with our corporate policy. More detailed information on this would constitute a business secret.			
10	Aspect: Public Policy – Management Approach		190		Business ethics	X	X
10	G4-SO6	Total value of political contributions	190				

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UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	G4-21 outside
	Specific Standard Disclosures G4-19						
	Aspect: Anti-competitive Behavior – Management Approach		55, 169, 177, 187 – 189		Business ethics	X	X
	G4-SO7	Legal actions for anti-competitive behavior, anti-trust and monopoly practices	229 – 230, 278, 296 – 297				
	Aspect: Compliance – Management Approach		55, 169, 177, 187 – 189		Business ethics	X	X
	G4-SO8	Fines and sanctions for noncompliance with laws and regulations	229 – 230, 278, 296 – 297, 300				
2	Aspect: Supplier Assessment for Impacts on Society – Management Approach		54, 89, 93 – 96, 101		Supplier management		X
	G4-SO9	Percentage of new suppliers that were screened using criteria for impacts on society	95	We do not report on the percentage of new suppliers screened using criteria for impact on society because these data are not available. We report on the procedure used for assessment.			
2	G4-SO10	Significant negative impacts on society in the supply chain and actions taken	89, 95 – 96	We do not report in detail on the negative impact on society determined during supplier evaluation. We give details on the areas in which essential impacts occurred and corrective measures were defined.			
2, 3	Aspect: Grievance Mechanisms for Impacts on Society – Management Approach		189		Business ethics	X	X
2, 3	G4-SO11	Number of grievances about impacts on society	189	We do not report on the number of formal grievances with respect to the negative impact on society. We report on the total number of notifications registered with the compliance hotline. We internally record the precise reason for the grievance, track how it is followed up and take corresponding action in line with our corporate policy. More detailed information on this would constitute a business secret.			
	Product Responsibility						
	Aspect: Customer Health and Safety – Management Approach		55, 104 – 107, 108 – 113, 115, 176, 188		Sustainable food supply		X
					Product stewardship	X	X
	G4-PR1	Percentage of significant product and service categories for which health and safety impacts are assessed	55, 105 – 108, 111 – 113, 115, 176, 188				
	G4-PR2	Incidents of noncompliance with regulations and voluntary codes concerning the health and safety impacts of products and services	296 – 297	We do not report on the number of incidents of noncompliance with regulations and voluntary codes concerning the health and safety impact of products and services. Any proceedings on account of violations would be reported in B Note 32 to the Consolidated Financial Statements, Chapter “Legal Risks”.			

GRI G4 Content Index

UNGC Principles	G4 Standard Disclosures		Page	Comments	Bayer area of activity	GRI aspect limitation G4-20 within	GRI aspect limitation G4-21 outside
	Specific Standard Disclosures G4-19						
7	Aspect: Product and Service Labelling – Management Approach		102 – 103, 106 – 108, 111, 113		Product stewardship	X	X
7	G4-PR3	Principles / procedures for product and service information and labeling	102 – 103, 106 – 108, 111, 113				
	G4-PR4	Incidents of noncompliance with regulations and voluntary codes concerning product and service information and labeling	296 – 297	We do not report on the number of incidents of noncompliance with regulations and voluntary codes concerning product and service information and labeling. Any proceedings on account of violations would be reported in B Notes to the Consolidated Financial Statements, Chapter “Legal Risks”.			
	G4-PR5	Results of surveys measuring customer satisfaction	102 – 103				
7	Aspect: Marketing Communications – Management Approach		102 – 104, 108, 113		Product stewardship	X	X
7	G4-PR6	Sale of banned or disputed products	115, 178				
	G4-PR7	Incidents of noncompliance with regulations and voluntary codes concerning marketing communications	296 – 297	We do not report on the number of incidents of noncompliance with regulations and voluntary codes concerning marketing communications. Any proceedings on account of violations would be reported in B Note 32 to the Consolidated Financial Statements, Chapter “Legal Risks”.			
	Aspect: Compliance – Management Approach		55, 169, 177, 187 – 189		Business ethics	X	X
	G4-PR9	Significant fines concerning the provision and use of products and services	229 – 230, 246, 278, 296 – 299				
	Further G4 Standard Disclosures						
2	G4-HR1	Significant investment agreements and contracts that include human rights clauses or screening	99				
1	G4-HR2	Employee training on human rights issues	83, 89, 97				
	Aspect: Customer Privacy – Management Approach		104, 174, 188				

Glossary

A

Access to Medicine (ATM) describes activities to promote general access to essential medicines and improve knowledge on health.

APM is the abbreviation for alternative performance measure; see A 2.4 for more information.

B

Biocides are substances and products that control pests such as insects, mice and rats, as well as algae, fungi and bacteria.

C

CDP is a nonprofit organization that works on behalf of institutional investors to compile annual rankings of detailed environmental data, especially in respect of greenhouse gas emissions (CDP-Climate) and water management (CDP-Water), from over 5,000 companies worldwide. According to CDP, more than 800 investors representing fund assets of around US$100 trillion currently draw on this information for their investment decisions.

Conflict minerals are those mined in conflict regions. They include tin, tungsten and tantalum ores, gold or their derivatives. Armed conflicts over the control of these resources occur particularly in the eastern part of the Democratic Republic of Congo and neighboring countries.

Consumer-validated concepts are concepts that are assessed in terms of their potential for success through consumer surveys conducted as part of market research activities.

Continuing operations Sales and earnings reporting for continuing operations pertains only to business operations that are expected to remain in the company's portfolio for the foreseeable future; opposite of discontinued operations.

(Corporate) compliance comprises the observance of statutory and company regulations on lawful and responsible conduct.

Corporate governance comprises the long-term management and oversight of the company in accordance with the principles of responsibility and transparency. The German Corporate Governance Code sets out basic principles for the management and oversight of publicly listed companies.

Corruption Perceptions Index (CPI) Since 1995, NGO Transparency International has produced an annual index of countries by the perceived level of public-sector corruption. The CPI ranks countries according to the extent to which public servants and politicians are believed to engage in bribery and to grant or accept undue advantage.

Credit default swaps (CDS) are tradable insurance contracts used to hedge against the default of a borrower.

D

Debt Issuance Program (DIP) DIP is a documentation platform that has enabled Bayer to flexibly issue notes in various currencies and with different maturities.

Diversity designates the variation within the workforce in terms of gender, origin, nationality, age, religion, sexual orientation and physical capability.

F

Field crops are cultivated plants with life cycles – vegetative development, flowering, ripening and death – lasting up to one year. Examples include cereals, oilseed rape and sugar beets.

Foreign exchange Claims for payments in foreign currencies traded on foreign exchanges, usually in the form of balances with foreign banks or bills of exchange or checks payable abroad; banknotes and coins denominated in foreign currencies are not considered to be foreign exchange.

G

GHG Protocol The Greenhouse Gas Protocol is an internationally recognized tool for recording, quantifying and reporting greenhouse gas emissions. Its standards cover all emissions within a company's value chain. Bayer aligns itself to the Corporate Standard for direct (Scope 1) and indirect (Scope 2) greenhouse gas emissions and also to the Corporate Value Chain (Scope 3) Accounting and Reporting Standard, which covers further indirect emissions along the value chain. Dual reporting was introduced in 2015 with the updating of the GHG guidelines for Scope 2. Indirect emissions have now to be reported using both the location-based and the market-based methods. The location-based method uses regional or national average emissions factors, while the market-based method applies provider- or product-specific emissions factors based on contractual instruments.

Global commercial paper program Commercial paper (CP) issued under Bayer's program is a short-term, unsecured debt instrument normally issued at a discount and redeemed at nominal value. It is a flexible way of obtaining short-term funding on the capital market. Bayer's commercial paper program allows the company to issue commercial paper on both the U.S. and European markets.

GRI (Global Reporting Initiative) is a nonprofit organization that works to promote the dissemination and optimization of sustainability reporting. The GRI guidelines are considered the most frequently used and internationally most recognized standard for sustainability reporting. These guidelines are evolved in a multi-stakeholder process. GRI was established in 1997 by Ceres (Coalition for Environmentally Responsible Economies) and UNEP (United Nations Environment Programme).

The **Group Leadership Circle** is the highest level of management at the Bayer Group and comprises roughly 480 managers with significant responsibility on a national or global level.

GxP is a collective term for all guidelines that govern "good working practice" and are particularly relevant for the fields of medicine, pharmacy and pharmaceutical chemistry. The "G" stands for "Good" and the "P" for "Practice," while the "x" in the middle is replaced by the respective abbreviation for the specific area of application – such as Good Manufacturing Practice (GMP), Good Laboratory Practice (GLP), Good Clinical Practice (GCP) or Good Agricultural Practice (GAP). These guidelines are established by institutions such as the European Medicines Agency or the U.S. Food and Drug Administration.

H

HSEQ stands for health, safety, environment and quality.

Hybrid bond A hybrid bond is a corporate bond with equity-equivalent properties, usually with either no maturity date or a very long maturity. Due to its subordination, it has a lower likelihood of repayment than a normal bond in the event of issuer bankruptcy.

I

ILO core labor standards
The eight core labor standards of the ILO (International Labour Organization) that define the minimum requirements for humane working conditions are internationally recognized "qualitative social standards." They represent universal human rights that are deemed valid in all countries regardless of their economic development status.

J

Junior management refers to managerial employees below the five highest management levels.

L

Local procurement at Bayer means that goods and services are ordered from suppliers that are based in the same country as the (Bayer) company that receives them.

N

Neonicotinoids are a chemical class of systemic insecticides.

O

OTC (over-the-counter) designates the business with nonprescription medicines.

P

Pharmacovigilance is defined as activities and the science they are based on that relate to the identification, assessment, comprehension and prevention of side effects or other problems associated with pharmaceutical products.

Phase I-IV studies are clinical phases in the development of a drug product. The active ingredient candidate is generally tested in healthy subjects in Phase I, and in patients in Phases II and III. The studies test the therapeutic tolerability and efficacy of active ingredients in a specific indication. Phase IV studies are conducted following the approval of a new drug product to monitor its safety and efficacy over an extended period of time. The studies are subject to strict legal requirements and documentation procedures.

Price/cash flow ratio
The price/cash flow ratio is the ratio of the share price to operating cash flow per share. It shows how long it would take for the company's cash flow to cover the share price.

Price/earnings ratio
This is the ratio of the current share price to earnings per share (EPS). A high price/earnings ratio indicates that the market assigns a high value to the stock in the expectation of future earnings growth.

Purchase price allocation (PPA) describes the process of allocating the purchase price into various assets and liabilities when a company is acquired.

R

Reconciliation The reconciliation records, on the one hand, those business activities not assigned to any other segment ("All Other Segments"), including particularly the services provided by Business Services and Currenta. It also includes "Corporate Functions and Consolidation," which largely comprises Bayer holding companies and Leaps by Bayer (formerly the Bayer Lifescience Center).

3Rs principle (replace, reduce, refine) Replace: prior to each project, Bayer checks whether an approved method is available that does not rely on animal studies and then applies it. Reduce: in case no alternative method exists, only as many animals are used as are needed to achieve scientifically meaningful results based on statutory requirements. Refine: Bayer ensures that animal studies are performed in a way that minimizes any suffering.

RSPO and RTRS credits
The credit system is a model that supports the production of ecologically, socially and economically sustainable products with RTRS/RSPO certification through the sale of so-called credits. The financial proceeds from credits benefit farmers, who are able to use the money to offset the additional costs of sustainable production.

S

Senior management refers to managerial employees in the five highest management levels.

Short-Term Incentive program (STI program) is the variable income component for all managerial staff. Employees taking part in the program share in the company's success of the past year in line with a uniform model that applies across the Group.

Significant locations of operation A selection of countries that accounted for more than 80% of total Bayer Group sales in 2017 (United States, Germany, China, Brazil, Japan, France, Canada, Italy, Mexico, U.K., India, Spain, Australia, Russia, Switzerland, Poland, Turkey and Argentina)

Social innovation To tackle the challenges of our time, we need to think and work in a way that goes beyond the boundaries of scientific disciplines and institutions – both in the science sector and social domain. The term defines the process by which new social practices emerge, prevail and become more widespread in various areas of society.

Syndicated credit facility
Credit line agreed with a group of banks; generally used for extensive financing requirements, such as when making an acquisition, to increase available liquidity or as security for the issuance of debt instruments. The credit facility can be utilized and repaid flexibly, either in full or in portions, during its term.

U

United Nations Global Compact (UNGC) The United Nations Global Compact is the most far-reaching and important responsible corporate governance initiative in the world. Based on 10 universal principles in the areas of human rights, labor, environment and anticorruption, the UNGC pursues the vision of an inclusive and sustainable global economy that benefits people, communities and markets everywhere. By committing to the UNGC, companies agree to document each year their efforts to uphold the 10 principles.

V

Vector control describes methods for the avoidance or targeted control of organisms that transmit pathogens triggering infectious diseases. Vectors include blood-sucking insects such as the Anopheles mosquito, which can transfer malaria parasites, for example.

W

Working capital is the difference between short-term current assets and short-term liabilities; it is calculated by deducting short-term liabilities from current assets (excluding cash and cash equivalents). In the statement of cash flows, the change in working capital is one of the variables used to assess a company's financial health. The objective of working capital management is to reduce working capital by minimizing the "financing gap" caused by the time lapse between the disbursement of funds (= payment for necessary raw materials) and the receipt of funds for the finished product.

Five-Year Summary

€ million	2013	2014	2015	2016	2017
Bayer Group					
Sales	40,157	41,339	46,085	34,943	35,015
EBITDA [1]	7,830	8,315	9,573	8,801	8,563
EBITDA before special items [1]	8,401	8,685	10,256	9,318	9,288
EBITDA margin before special items [1]	20.9%	21.0%	22.3%	26.7%	26.5%
EBIT [1]	4,934	5,395	6,241	5,738	5,903
EBIT before special items [1]	5,773	5,833	7,060	6,826	7,130
Income before income taxes	4,207	4,414	5,236	4,773	4,577
Net income (from continuing and discontinued operations)	3,189	3,426	4,110	4,531	7,336
Earnings per share (from continuing and discontinued operations) (€) [1]	3.86	4.14	4.97	5.44	8.41
Core earnings per share (from continuing operations) (€) [1]	5.61	5.89	6.82	6.67	6.74
Net cash provided by operating activities (from continuing and discontinued operations)	5,171	5,810	6,890	9,089	8,134
Net financial debt	6,731	19,612	17,449	11,778	3,595
Capital expenditures (as per segment table) [2]	2,155	2,484	2,554	2,627	2,418
Bayer AG					
Total dividend payment	1,737	1,861	2,067	2,233	2,315
Dividend per share (€)	2.10	2.25	2.50	2.70	2.80
Innovation					
Research and development expenses	3,406	3,537	4,274	4,405	4,504
Ratio of R&D expenses to sales – Pharmaceuticals (%)	15.8	15.6	16.0	16.7	16.2
Ratio of R&D expenses to sales – Crop Science (%)	9.8	10.3	10.7	11.7	11.7
Employees in research and development	13,509	13,900	14,753	14,213	14,041
Employees					
Number of employees [3] (Dec. 31)	112,400	117,400	116,600	99,592	99,820
Personnel expenses (including pension expenses) (€ million)	9,430	9,693	11,176	9,459	9,528
Proportion of women in senior management (%)	25	26	28	31	32
Proportion of employees with health insurance (%)	95	96	96	98	98
Fluctuation (voluntary / total) (%)	5.5 / 14.0	4.8 / 11.4	5.0 / 13.9	4.8 / 13.2	4.8 / 10.4
Hours of vocational and ongoing training per employee	17.8	18.0	20.0	23.0	23.4
Safety & Environmental Protection					
Recordable Incident Rate for Bayer employees (RIR)	0.49	0.44	0.43	0.40	0.45
Loss of Primary Containment Incident Rate (LoPC-IR) [4]	0.16	0.13	0.11	0.17	0.13
Total energy consumption (terajoules)	27,972	26,288	24,677	26,243	25,832
Energy efficiency (kWh / €1,000 external sales) [5]	171	154	143	130	125
Total greenhouse gas emissions (CO_2 equivalents in million t) [6]	4.40	4.06	4.62	4.64	3.63
Specific greenhouse gas emissions (CO_2 equivalents in kg / €1,000 external sales), according to the market-based method [7]	52.18	46.84	55.70	48.45	46.26
Water use (million m^3)	117	104	110	93	98

2016 figures restated; figures for 2013 – 2015 as last reported; Safety & Environmental Protection: prior years' figures restated

[1] For definitions of the indicators, see A 2.4

[2] Group total 2016 including Covestro

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

[4] LoPC = Loss of Primary Containment; number of incidents in which chemicals leak from their primary container, such as pipelines, pumps, tanks or drums, per 200,000 working hours

[5] Quotient of total energy consumption and external sales; Bayer excluding Currenta

[6] Direct emissions from power plants, waste incinerators and production plants and indirect emissions from external supplies of electricity, steam and cooling (according to the market-based method); portfolio-adjusted in accordance with the GHG Protocol

[7] Bayer excluding Currenta

Financial Calendar

Q1 2018 Interim Report	*May 3, 2018*
Annual Stockholders' Meeting 2018	*May 25, 2018*
Planned dividend payment day	*May 30, 2018*
Q2 2018 Interim Report	*September 5, 2018*
Q3 2018 Interim Report	*November 13, 2018*
Annual Report 2018	*February 27, 2019*
Q1 2019 Interim Report	*April 25, 2019*
Annual Stockholders' Meeting 2019	*April 26, 2019*

Masthead

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Certain statements contained in this Annual Report may constitute "forward-looking statements." Actual results could differ materially from those projected or forecast in the forward-looking statements. The factors that could cause actual results to differ materially include the following: uncertainties as to the timing of the transaction; the possibility that the parties may be unable to achieve expected synergies and operating efficiencies in the merger within the expected time frames or at all and to successfully integrate Monsanto's operations into those of Bayer; such integration may be more difficult, time-consuming or costly than expected; revenues following the transaction may be lower than expected; operating costs, customer loss and business disruption (including, without limitation, difficulties in maintaining relationships with employees, customers, clients or suppliers) may be greater than expected following the announcement of the transaction; the retention of certain key employees at Monsanto; risks associated with the disruption of management's attention from ongoing business operations due to the transaction; the conditions to the completion of the transaction may not be satisfied, or the regulatory approvals required for the transaction may not be obtained on the terms expected or on the anticipated schedule; the parties' ability to meet expectations regarding the timing, completion and accounting and tax treatments of the merger; the impact of the refinancing of the loans taken out for the transaction, the impact of indebtedness incurred by Bayer in connection with the transaction and the potential impact on the rating of indebtedness of Bayer; the effects of the business combination of Bayer and Monsanto, including the combined company's future financial condition, operating results, strategy and plans; other factors detailed in Monsanto's Annual Report on Form 10-K filed with the SEC for the fiscal year ended August 31, 2017 and Monsanto's other filings with the SEC, which are available at http://www.sec.gov and on Monsanto's website at www.monsanto.com; and other factors discussed in Bayer's public reports which are available on the Bayer website at www.bayer.com. Bayer and Monsanto assume no obligation to update the information in this communication, except as otherwise required by law. Readers are cautioned not to place undue reliance on these forward-looking statements that speak only as of the date.

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