

# Forecast

## Economic Environment in 2020

**We expect economic uncertainty to be very high in 2020 and that global growth will be significantly depressed by the drop in demand and production outages in connection with the coronavirus outbreak. The global economy is forecast to grow by 2.0%, considerably slower than in 2019 (+2.6%). In the European Union (E.U.),<sup>1</sup> economic growth in most member states should continue to soften. We also expect momentum to slow in the United States as the tax incentives expire and employment growth levels off. Growth in the emerging markets of Asia will presumably be much weaker due to a considerable slowdown in China in the first half of the year. We expect the South American economy to remain fragile and anticipate at best a weak recovery. Global chemical production is expected to grow by 1.2% in 2020, well below the 2019 level (+1.8%). For 2020, we expect an average oil price of \$60 per barrel for Brent crude and an exchange rate of \$1.15 per euro.**

### Trends in the global economy in 2020

- Lower growth forecast for the E.U. and the United States
- Growth deceleration in China expected to continue
- Weak recovery in South America

We expect growth momentum in the **E.U.** to continue to slow overall. We anticipate lower growth rates in Germany, France and Spain. For Italy, we are forecasting a slight decline in gross domestic product (GDP). Besides cyclical economic weakness, lower demand for European investment goods and vehicles in China will contribute to this development. In the United Kingdom, the uncertainty surrounding the nature and consequences of its departure from the E.U.

remains high, which will dampen investment activity. As a result, we expect a considerable slowdown in economic growth. Economic momentum in the eastern E.U. countries is also likely to slow, but should remain high compared with western Europe thanks to rising real incomes.

We expect a gradual easing of growth in the **United States**. Private consumption will presumably continue to be supported by solid employment figures and rising incomes but employment growth will trend downward. Industry investment dynamics should continue to decline as the initial impetus from the tax reform levels off and capacity utilization is often below average. The trade conflict with China is also expected to further weigh on growth since it is not currently expected that the additional tariffs introduced over the course of 2019 will be widely rolled back. This makes U.S. imports of intermediate inputs from China more expensive and reduces the ability of U.S. exporters to compete on price in China. Exporters will also have to contend with the effects of a continued strong U.S. dollar.

The **emerging markets of Asia** will presumably see much slower growth. We expect growth in demand and production in **China** to be much weaker than in the previous year due to the coronavirus outbreak. The resulting decline in China's import demand will also have a negative impact on the economies of its neighboring countries in Asia. Moreover, production restrictions in China may lead to interruptions in neighboring countries, since value chains are particularly closely interconnected in Asia. Against this background, we anticipate a marked growth deceleration in China to 4.5%. For India, we expect an unchanged, comparatively weak growth rate of below 5% in this environment. The corporate tax cuts taken in response should only start to take effect after a delay amid a challenging international environment.

We are forecasting flat GDP for **Japan**. Private consumption is likely to remain subdued after the consumption tax rate was raised in

October 2019. Exports and investment are not expected to provide any strong stimulus in a weak overall economic environment. However, the government has approved a package of fiscal measures to cushion the negative effects of the tax increase and avoid a slide into recession.

In **South America**, leading economic indicators point to ongoing recovery in Brazil. By contrast, the recession in Argentina is likely to continue. Overall, the forecast remains uncertain due to the social conflicts that have intensified significantly in several countries in the region. In addition, lower Chinese demand should have a negative impact on raw materials exporters in the region. We therefore only expect a weak recovery in macroeconomic activity.

<sup>1</sup> In the rest of this chapter, "E.U." refers to the E.U. 27 and the United Kingdom.

### Outlook for gross domestic product 2020

Real change compared with previous year

World	2.0%	
European Union	0.9%	
United States	1.7%	
Emerging markets of Asia	4.2%	
Japan	0.0%	
South America	0.9%	

### Trends in gross domestic product 2020–2022

Average annual real change

World	2.6%	
European Union	1.2%	
United States	1.8%	
Emerging markets of Asia	5.2%	
Japan	0.5%	
South America	2.4%	

### Outlook for key customer industries

#### ■ Slower growth expected in global industrial production

Overall, we expect global industrial growth to be weaker in 2020, at 1.2% (2019: +1.5%). In the advanced economies, we expect the slight decline in production to continue overall. In the emerging markets, we are forecasting significantly lower growth compared with the previous year.

We anticipate a downturn in the **transportation industry**<sup>1</sup> as a whole. We expect global automotive production to again decline, driven in particular by the coronavirus and the resulting production stoppages, as well as lower demand in China.

Consequently, we are forecasting a decline in production in the largest automotive market, China, as well as in Japan and India. Automotive production will likely continue to decline markedly in the E.U. as well: We anticipate a decrease in western Europe and a slight decline in the eastern E.U. countries and Russia. We are also forecasting a slight decrease in automotive production in North America and a recovery in South America after the recession in the previous year.

In the **energy and raw materials sector**, we expect a low growth rate given the weak overall momentum in the economy and industry. Production growth should be similar to the previous year in both the advanced economies and the emerging markets.

We expect growth in the **construction industry** to be at the prior-year level. Overall, construction activity should continue to outstrip growth in the manufacturing industry, supported by low interest rates, increasing urbanization and the demand for investment in energy and transportation infrastructure. We anticipate slightly slower construction growth in Europe. In the United States, we expect the downturn in the housing market to bottom out, with construction activity slightly below the previous year. For Asia, we expect construction growth to be lower than in the previous year but still considerably above the global average.

According to our forecasts, growth in **consumer goods production** will be more or less on a level with the previous year. We expect slightly higher growth in care products, roughly in line with global GDP growth.

Growth in the **electronics industry** will presumably be below the prior-year figure. The rapid technological progress in this sector, the resulting short product cycles and the advance of digitalization should lead to additional consumer spending and investment. However, growth perspectives for the electronics industry remain sub-

dued overall due to the central role played by China in global value chains.

We anticipate slightly slower growth in the **health and nutrition** sector. Growth in the food industry should weaken slightly in line with the more subdued global economic environment. By contrast, we expect stronger growth in the pharmaceutical industry compared with the previous year as a result of the coronavirus outbreak.

Under normal weather conditions, we expect slightly slower global growth in **agricultural production** in 2020. For Europe, we anticipate a sideways movement, as in the previous year. In the United States, agricultural production should increase slightly again following the weather-related production losses and the decline in soybean exports to China in the previous year. We also expect the trade agreement with China to provide tailwinds. This should however dampen agricultural production in South America. In any case, we expect lower growth here after the drought recovery effects in the previous year. The highest growth will presumably again be achieved in the emerging markets of Asia.

<sup>1</sup> The transportation industry includes the production of motor vehicles, motor vehicle parts and the construction of other vehicles (especially ships and boats, trains, air and spacecraft, and two-wheelers).

## Outlook for the chemical industry

### ■ Global growth in chemical industry remains below average

Global chemical production (excluding pharmaceuticals) is expected to grow by 1.2% in 2020, much slower than in 2019. We anticipate a slight decline in the advanced economies (2020: -0.8%, 2019: -0.9%) and growth below the prior-year level in the emerging markets (2020: +2.4%, 2019: +3.5%).

In **China**, the world's largest chemical market, we are forecasting a significantly lower growth rate (2020: +3.0%, 2019: +4.7%). Weaker final demand and production stoppages in customer industries will likely have a significant negative impact on chemical growth in China. We do not expect that the drop in demand caused by the coronavirus outbreak will be able to be fully recouped over the course of the year. We assume here that the trade conflict with the United States does not intensify again.

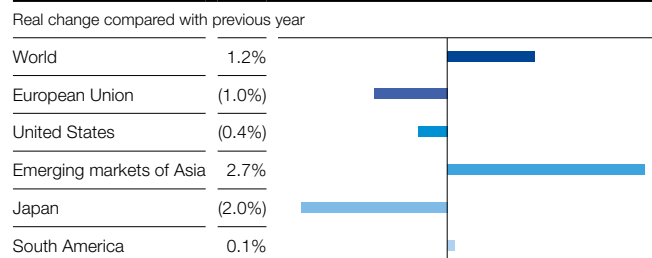
For the **E.U.**, we again anticipate a decline in chemical production. Due to the sharp drop in chemical production in the second half of 2019, production levels at the year-end were below the annual average. It is not likely that the recovery we are forecasting over the course of the year will be strong enough to achieve full-year volumes growth.

We expect a continued slight decline in chemical production in the **United States**. Growth in customer industries will presumably remain weak overall despite the slight recovery we anticipate in agriculture and the expected stabilization in the construction industry, which should support demand for chemicals.

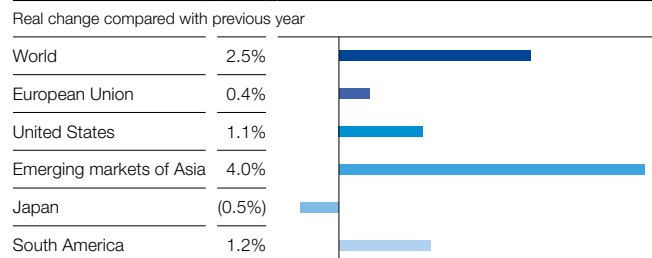
In **Japan**, we are forecasting a further decline in the chemical market amid a weak domestic economy and the slowing regional environment.

After declining in the previous year, we expect a stabilization in demand for chemicals in **South America**, driven mainly by a slight upturn in the Brazilian market.

### Outlook for chemical production 2020 (excluding pharmaceuticals)



### Trends in chemical production 2020–2022 (excluding pharmaceuticals)



## Outlook 2020

For 2020, we expect global economic uncertainty to be very high and that growth will be significantly depressed by the drop in demand and production outages in connection with the coronavirus outbreak. Consequently, the global economy is forecast to grow by 2.0%, considerably slower than in 2019 (+2.6%). Global chemical production is expected to expand by 1.2%, well below the 2019 level (1.8%). We anticipate an average oil price of \$60 for a barrel of Brent crude and an exchange rate of \$1.15 per euro. Despite the challenging environment characterized by a high level of uncertainty, we aim to increase our sales to between €60 billion and €63 billion (2019: €59,316 million). The BASF Group's income from operations (EBIT) before special items is expected to be between €4.2 billion and €4.8 billion (2019: €4,536 million). The return on capital employed (ROCE) should reach between 6.7% and 7.7% (2019: 7.7%) and thus be below the cost of capital percentage of 9%.

We expect growth in most of our customer industries. For the automotive industry, however, we anticipate a continued decline in production. Our outlook assumes that the trade conflict between the United States and its trading partners does not intensify, and that Brexit will not have any larger economic repercussions during the transition phase.

[For more information on our expectations for the economic environment in 2020, see page 133 onward](#)

[For more information on our opportunities and risks, see page 139 onward](#)

### Sales, earnings and ROCE forecast for the BASF Group<sup>1</sup>

- Sales growth of between €60 billion and €63 billion
- EBIT before special items of between €4.2 billion and €4.8 billion
- ROCE of between 6.7% and 7.7%

Our forecast for 2020 takes into account the agreement between BASF and an affiliate of Lone Star on the sale of BASF's construction chemicals business. The transaction is expected to close in the third quarter of 2020, subject to the approval of the relevant competition authorities. Until closing, the income after taxes of the construction chemicals business will be presented in the income after taxes of BASF Group as a separate item ("Income after taxes from discontinued operations"); it will not be included in the sales or EBIT before special items of the BASF Group.

The agreement between BASF and DIC on the sale of BASF's global pigments business is likewise reflected in this outlook. The transaction is expected to close in the fourth quarter of 2020, subject to the approval of the relevant competition authorities. Until closing, the assets and liabilities to be divested will be presented in a disposal group in the Dispersions & Pigments division.

This outlook also includes the acquisition of Solvay's integrated polyamide business on January 31, 2020, which will be integrated into the Performance Materials and Monomers divisions.

In 2020, we expect the BASF Group as a whole to increase sales to between €60 billion and €63 billion (2019: €59,316 million). The main drivers should be volumes growth and portfolio effects from the acquisition of Solvay's integrated polyamide business, which closed in January 2020. Lower prices will presumably have an offsetting effect. We expect considerable sales growth in the Materials, Agricultural Solutions and Nutrition & Care segments. We anticipate

slightly higher sales in the Chemicals, Surface Technologies and Industrial Solutions segments, and sales at prior-year level in Other.

The BASF Group's EBIT before special items is expected to reach between €4.2 billion and €4.8 billion (2019: €4,536 million). We expect considerably higher contributions from the Industrial Solutions segment and Other. Our planning assumes that EBIT before special items will be slightly above the prior-year level in the Surface Technologies, Nutrition & Care and Agricultural Solutions segments. By contrast, we anticipate a considerable decline in EBIT before special items in the Materials and Chemicals segments.

The average cost of capital basis will increase in 2020 due to the inclusion of the assets acquired from Solvay. As a result, we expect the BASF Group's ROCE to reach between 6.7% and 7.7% (2019: 7.7%). In both the Materials (2019: 10.7%) and Industrial Solutions (2019: 12.5%) segments, we forecast a considerable decline in ROCE compared with the previous year. We expect ROCE to be at the prior-year level in the Surface Technologies segment (2019: 5.7%). By contrast, we anticipate a slight year-on-year increase for the Agricultural Solutions (2019: 5.3%) and Chemicals (2019: 6.8%) segments. In the Nutrition & Care segment (2019: 10.0%), we expect a considerable increase in ROCE compared with 2019.

The significant risks and opportunities that could affect our forecast are described under Opportunities and Risks on pages 139 to 147.

<sup>1</sup> For sales, "slight" represents a change of 1–5%, while "considerable" applies to changes of 6% and higher. "At prior-year level" indicates no change (+/–0%). For earnings, "slight" means a change of 1–10%, while "considerable" is used for changes of 11% and higher. "At prior-year level" indicates no change (+/–0%). At a cost of capital percentage of 9% for 2020, we define a change in ROCE of 0.1 to 1.0 percentage points as "slight," a change of more than 1.0 percentage points as "considerable" and no change (+/–0 percentage points) as "at prior-year level."

Forecast by segment<sup>a</sup>

Million €

	Sales		EBIT before special items		ROCE	
	2019	Forecast 2020	2019	Forecast 2020	2019	Forecast 2020
Chemicals	9,532	slight increase	791	considerable decline	6.8%	slight increase
Materials	11,466	considerable increase	1,003	considerable decline	10.7%	considerable decline
Industrial Solutions	8,389	slight increase	820	considerable increase	12.5%	considerable decline
Surface Technologies <sup>b</sup>	13,142	slight increase	722	slight increase	5.7%	at prior-year level
Nutrition & Care	6,075	considerable increase	793	slight increase	10.0%	considerable increase
Agricultural Solutions	7,814	considerable increase	1,095	slight increase	5.3%	slight increase
Other	2,898	at prior-year level	(688)	considerable increase	–	–
<b>BASF Group</b>	<b>59,316</b>	<b>€60 billion–€63 billion</b>	<b>4,536</b>	<b>€4.2 billion–€4.8 billion</b>	<b>7.7%</b>	<b>6.7–7.7%</b>

<sup>a</sup> For sales, "slight" represents a change of 1–5%, while "considerable" applies to changes of 6% and higher. "At prior-year level" indicates no change (+/–0%). For earnings, "slight" means a change of 1–10%, while "considerable" is used for changes of 11% and higher. "At prior-year level" indicates no change (+/–0%). At a cost of capital percentage of 9% for 2020, we define a change in ROCE of 0.1 to 1.0 percentage points as "slight," a change of more than 1.0 percentage points as "considerable" and no change (+/–0 percentage points) as "at prior-year level."

<sup>b</sup> The 2019 segment data for Surface Technologies excludes the construction chemicals activities presented as discontinued operations.

## Sales and earnings forecast for the segments

We expect slight sales growth in the **Chemicals** segment in 2020, mainly driven by higher volumes. We anticipate improved availability of steam cracker products, as volumes development in 2019 was negatively impacted by the scheduled turnarounds of our steam crackers in Port Arthur, Texas; Antwerp, Belgium; and Ludwigshafen, Germany. In addition, our planning assumes higher sales volumes of oxo alcohols in the Petrochemicals division, and in almost all business areas in the Intermediates division. Prices in both divisions will however decline due to high product availability on the market. Consequently, EBIT before special items will presumably be considerably below the 2019 level as a result of lower margins.

In the **Materials** segment, we expect considerable year-on-year sales growth in 2020, mainly driven by the positive contribution from the acquisition of Solvay's integrated polyamide business. We also anticipate higher volumes overall. Lower prices and currency effects should dampen sales development. We expect a considerable

decline in EBIT before special items due to a considerably lower contribution from the Monomers division on the back of lower margins and higher fixed costs. The expected increase in fixed costs will be from higher depreciation and amortization following the acquisition of Solvay's integrated polyamide business, new plants and one-off effects. The higher EBIT before special items forecast for the Performance Materials division due to higher volumes and margins will not be able to compensate for this.

Sales in the **Industrial Solutions** segment will likely increase slightly in 2020, mainly from higher volumes in both divisions. The sale of the ultrafiltration membrane business to DuPont Safety & Construction (DuPont) on December 31, 2019, as well as the transfer of BASF's paper and water chemicals business to the Solenis group on January 31, 2019, will have an offsetting effect. Despite the continuing challenging market environment, we expect a considerable increase in EBIT before special items for the segment, primarily as a result of higher volumes.

In the **Surface Technologies** segment, we are forecasting slight sales growth despite the expected decline in production in the automotive industry. We anticipate higher prices, especially in precious metal trading and for mobile emissions catalysts in the Catalysts division. Overall, we aim to slightly increase EBIT before special items, primarily with improved margins in precious metal trading. By contrast, we anticipate a slight year-on-year decline in sales and EBIT before special items in the Coatings division.

For the **Nutrition & Care** segment, we expect considerably higher sales than in 2019, largely from volumes growth in both divisions. Our planning assumes a continued improvement in product availability, especially in the Nutrition & Health division. Lower prices in both divisions will presumably have an offsetting effect. We expect to see a slight year-on-year improvement in EBIT before special items, mainly as a result of growth in sales volumes and despite positive one-off effects in 2019.

Despite the continuing challenging market environment, we anticipate considerable sales growth in the **Agricultural Solutions** segment. We aim to considerably increase our sales volumes, which should more than offset negative currency effects. Overall, we expect a slight increase in EBIT before special items. We will maintain our program to boost efficiency. We will also continue to invest at a high level in research and development and digitalization in 2020.

Sales in **Other** are expected to match the 2019 level in 2020. For EBIT before special items, we are forecasting a figure considerably above the previous year due to solid contributions from our equity-accounted shareholdings. Lower corporate research costs should also contribute here.

## Capital expenditures

### Capex of around €3.4 billion planned for 2020

We are planning capital expenditures (additions to property, plant and equipment excluding acquisitions, IT investments, restoration obligations and right-of-use assets arising from leases) of around €3.4 billion for the BASF Group in 2020. For the period from 2020 to 2024, we have planned capital expenditures totaling €23.6 billion. The investment volume in the coming years will thus exceed that of the planning period 2019 to 2023. Of the planned capital expenditures, €8.2 billion relate to our major investment projects in Zhanjiang, China, and Mundra, India, to expand our businesses in Asia and in battery materials.

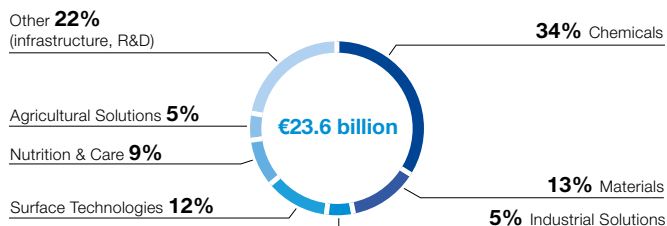
Projects currently being planned or underway include:

#### Capex: selected projects

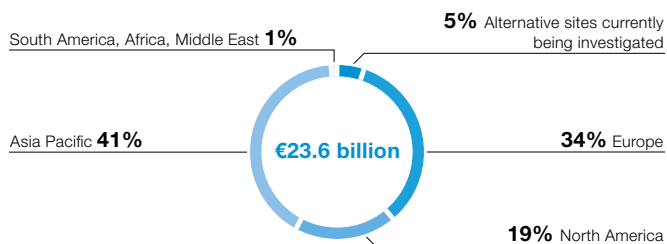
Location	Project
Antwerp, Belgium	Capacity expansion: integrated ethylene oxide complex Gradual capacity expansion: alkoxyates
Geismar, Louisiana	Capacity expansion: MDI plant
Harjavalta, Finland and Schwarzheide, Germany	Investment: battery materials
Ludwigshafen, Germany	Construction: production plant for vitamin A
Mundra, India	Investment: acrylics value chain <sup>a</sup>
Zhanjiang, China	Planned construction: integrated Verbund site

<sup>a</sup> In cooperation with Adani Group

### Capex by segment 2020–2024



### Capex by region 2020–2024



## Dividend

We stand by our ambitious dividend policy and offer our shareholders an attractive dividend yield. We aim to increase our dividend each year.

[Information on the proposed dividend can be found on page 13](#)

## Financing

In 2020, we expect cash outflows in the equivalent amount of around €1.3 billion from the scheduled repayment of bonds. To refinance maturing bonds and to optimize our maturity profile, we continue to have medium to long-term corporate bonds and our U.S. dollar commercial paper program at our disposal.

[Information on our financing policies can be found on page 55](#)

## Events after the reporting period

We closed the acquisition of Solvay's global polyamide business on January 31, 2020. The E.U. Commission had approved the acquisition of the polyamide business, subject to certain conditions, on January 18, 2019. These conditions require the sale of parts of the original transaction scope to a third party, specifically Solvay's production plants in the engineering plastics field in Europe. Domo Chemicals, Leuna, Germany, was approved by the E.U. Commission as the buyer. The acquired polyamide business will be integrated into the Performance Materials and Monomers divisions.

On February 14/15, 2020, a jury in a U.S. Federal District Court awarded \$15 million in compensatory damages against defendants Monsanto Company and BASF Corporation after a trial related to alleged yield losses of a peach farmer in connection with the use of the dicamba herbicide. The jury also found that Monsanto was liable for \$250 million in punitive damages. Finally, the jury found that the defendants were acting in a joint venture and conspiracy. Following the jury's decision, the court is considering whether BASF Corporation is also liable for the punitive damages award against Monsanto because of the joint venture finding. BASF intends to use all legal remedies available and will appeal the decision as to compensatory damages and, if applicable, punitive damages.

## Opportunities and Risks

The goal of BASF's risk management is to identify and evaluate opportunities and risks as early as possible and to take appropriate measures in order to seize opportunities and limit business losses. The aim is to avoid risks that pose a threat to BASF's continued existence and to make improved managerial decisions to create value. We define opportunities as potential successes that exceed our defined goals. We understand risk to be any event that can negatively impact the achievement of our short-term operational or long-term strategic goals.

### Opportunities

Potential successes that exceed our defined goals

### Risks

Events that can negatively impact the achievement of our goals

In order to effectively measure and manage identified opportunities and risks, we quantify these where appropriate in terms of probability and economic impact in the event they occur. Where possible, we use statistical methods to aggregate opportunities and risks into risk factors. This way, we achieve an overall view of opportunities and risks at a portfolio level, allowing us to take effective measures for risk management.

### Overall assessment

- Significant opportunities and risks arise from overall economic developments, margin and exchange rate volatility
- No threat to continued existence of BASF

For 2020, we anticipate much slower global economic growth compared with the previous year. We expect global economic uncertainty to be extremely high and that growth will be significantly depressed by the drop in demand and production outages in connection with the coronavirus outbreak. Important opportunities and risks for our earnings are associated with uncertainty regarding market growth and the development of key customer industries, as well as margin volatility. An escalation of the trade conflicts between the United States and its trade partners and an even greater slowdown of the Chinese economy also pose significant risks. Such a development would have an even greater negative impact on demand for intermediate and investment goods. This would impact the emerging markets that export raw materials as well as the advanced economies. This is especially true for Europe. Further risks to the global economy arise from an escalation of geopolitical conflicts.

According to our assessment, there are no significant individual risks that pose a threat to the continued existence of the BASF Group. The same applies to the sum of individual risks, even in the case of a global economic crisis.

Ultimately, however, residual risks (net risks) remain in all entrepreneurial activities that cannot be ruled out, even by comprehensive risk management.

### Potential short-term effects on EBIT of key opportunity and risk factors subsequent to measures taken<sup>a</sup>

Possible variations related to:	Outlook - 2020 +	
<b>Business environment and sector</b>		
Market growth	■■■■■	■■■■■
Margins	■■■■■	■■■■■
Competition	■■■■■	■■■■■
Regulation/policy	■■■■■	■■■■■
<b>Company-specific opportunities and risks</b>		
Purchasing/supply chain	■■■■■	■■■■■
Investments/production	■■■■■	■■■■■
Personnel	■■■■■	■■■■■
Acquisitions/divestitures/cooperations	■■■■■	■■■■■
Information technology	■■■■■	■■■■■
Law	■■■■■	■■■■■
<b>Financial</b>		
Exchange rate volatility	■■■■■	■■■■■
Other financial opportunities and risks	■■■■■	■■■■■

<sup>a</sup> Using a 95% confidence interval per risk factor based on planned values; summation is not permissible

## Risk management process

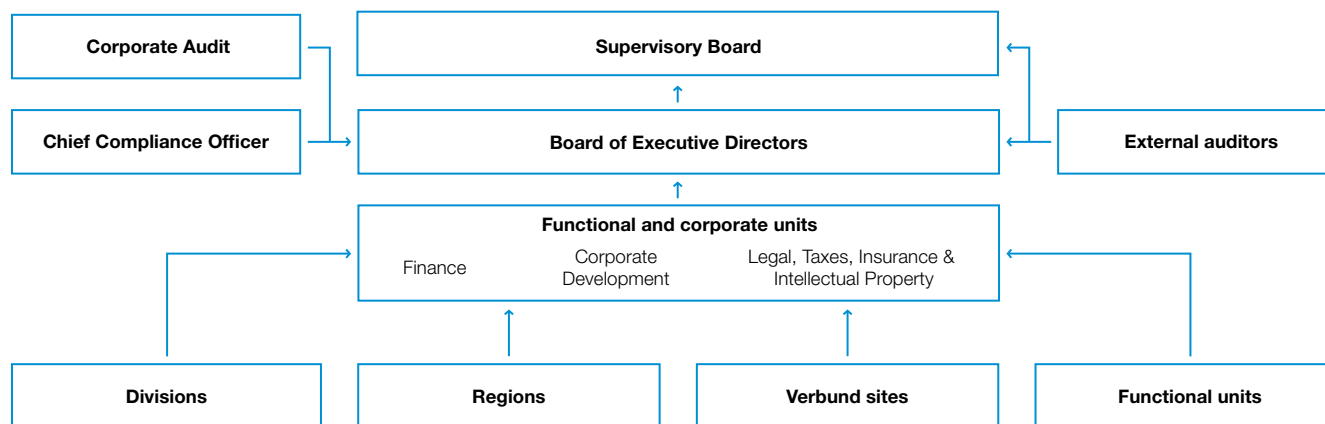
- **Integrated process for identification, assessment and reporting**
- **Decentralized management of specific opportunities and risks**
- **Aggregation at a Group level**

The BASF Group's risk management process is based on the international risk management standard COSO II Enterprise Risk Management – Integrated Framework (2004), and has the following key features:

### Organization and responsibilities

- Risk management is the responsibility of the Board of Executive Directors, which also determines the processes for approving investments, acquisitions and divestitures.
- The Board of Executive Directors is supported by the units Finance, Corporate Development and Legal, Taxes, Insurance & Intellectual Property, and the Chief Compliance Officer. These units coordinate the risk management process at a Group level, examine financial and sustainability-related opportunities and risks, and provide the structure and appropriate methodology. Opportunity and risk management is thus integrated into the strategy, planning and budgeting processes.
- A network of risk managers in the business, functional and corporate units as well as in the regions and at the Verbund sites advances the implementation of appropriate risk management practices in daily operations.
- The management of specific opportunities and risks is largely delegated to the operating divisions, the functional units and the regions, and is steered at a regional or local level. Risks relating to exchange rates and raw materials prices are an exception. In this case, there is an initial consolidation at a Group level before derivative hedging instruments, for example, are used.
- BASF's Chief Compliance Officer (CCO) manages the implementation of our Compliance Management System, supported by

## Organization of BASF Group's risk management (until December 31, 2019)



additional compliance officers worldwide. He regularly reports to the Board of Executive Directors on the status of implementation as well as on any significant results. He also provides a status report to the Supervisory Board's Audit Committee at least once a year, including any major developments. In the event of significant incidents, the Audit Committee is immediately informed by the Board of Executive Directors.

- The internal auditing unit (Corporate Audit) is responsible for regularly auditing the risk management system established by the Board of Executive Directors in accordance with section 91(2) of the German Stock Corporation Act. Furthermore, as part of its monitoring of the Board of Executive Directors, the Supervisory Board considers the effectiveness of the risk management system. The suitability of the early detection system we set up for risks is evaluated by our external auditor.
- The processes will be transferred to the new organization, which became effective as of January 1, 2020. This will not affect the structure or effectiveness of the risk management process.

### Instruments

- The Risk Management Policy, applicable throughout the Group, forms the framework for risk management and is implemented by the operating divisions, the functional units and the regions according to their specific conditions.
- A catalog of opportunity and risk categories helps to identify all relevant financial and sustainability-related opportunities and risks as comprehensively as possible.
- We use standardized evaluation and reporting methods for the identification and assessment of risks. The aggregation of opportunities, risks and sensitivities at division and Group level using a Monte Carlo simulation helps us to identify effects and trends across the Group.
- The sustainability-related topics relevant for BASF are addressed by the responsible operating divisions, functional units and the regions, which assess the risks identified as being relevant according to impact and probability of occurrence. We also systematically assess opportunities and risks with effects that cannot yet be measured in monetary terms, such as reputational



risks. We minimize sustainability risks with our sustainability management tools. For instance, we have established global monitoring systems to verify compliance with laws and our voluntary commitments in this area. These also incorporate our suppliers.

- As part of our analysis of sustainability-related opportunities and risks, we also consider the physical risks associated with climate change (such as damage to plants caused by external weather events) and transition risks (such as impairment due to emission levels of plants) as defined by the Task Force on Climate-related Financial Disclosures (TCFD).
- The BASF Group's management is informed about operational opportunities and risks (observation period of up to one year) in the monthly management report produced by the Finance department. In addition, Finance provides information twice a year on the aggregated opportunity/risk exposure of the BASF Group. Furthermore, if a new individual risk is identified which has a more than €10 million impact on earnings or bears reputational risks, it must be immediately reported.
- As part of strategy development, the Corporate Development unit conducts strategic opportunity/risk analyses with a 10-year assessment period. These analyses are annually reviewed as part of strategic controlling and are adapted if necessary.

[For more information on our sustainability management processes, see page 36 onward](#)

- Our Group-wide Compliance Program aims to ensure adherence to legal regulations and the company's internal guidelines. Our global employee Code of Conduct firmly embeds these mandatory standards into everyday business. Members of the Board of Executive Directors are also expressly obligated to follow these principles.

[For more information on our Group-wide Compliance Program, see page 157 onward](#)

### Significant features of the internal control and risk management system with regard to the Group financial reporting process

- **Conducted in accordance with standardized Group guidelines**
- **Segregation of duties, principle of dual control and clearly regulated access rights**
- **Annual evaluation of the control environment and relevant processes at significant companies**

The consolidated financial statements are prepared by a unit in the Finance department. BASF Group's accounting process is based on a uniform accounting guideline that sets out accounting policies and the significant processes and deadlines on a Group-wide basis. There are binding directives for the internal reconciliations and other accounting operations within the Group. Standard software is used to carry out the accounting processes for the preparation of the individual financial statements as well as for the consolidated financial statements. There are clear rules for the access rights of each participant in these processes.

Employees involved in the accounting and reporting process meet the qualitative requirements and participate in training on a regular basis. There is a clear assignment of responsibilities between the specialist units, companies and regional service units involved. We strictly adhere to the principles of segregation of duties and dual control, or the "four-eyes principle." Complex actuarial reports and evaluations are produced by specialized service providers or specially qualified employees.

An internal control system for financial reporting continuously monitors these principles. To this end, methods are provided to ensure that evaluation of the internal control system in financial reporting is structured and uniform across the BASF Group.

The significant risks for the BASF Group regarding a reliable control environment for proper financial reporting are reviewed and updated on an annual basis. Risks are compiled into a central risk catalog.

Moreover, a centralized selection process identifies companies that are exposed to particular risks, that are material to the Consolidated Financial Statements of the BASF Group, or that provide service processes. The selection process is conducted annually. In the relevant companies, one person is given the responsibility of monitoring the execution of the requirements for an effective control system in financial reporting.

In these companies, the process comprises the following steps:

- **Evaluation of the control environment**  
Adherence to internal and external guidelines that are relevant for the maintenance of a reliable control environment is checked by means of a standardized questionnaire.
- **Identification and documentation of control activities**  
In order to mitigate the risks to the financial reporting processes listed in our central risk catalog, critical processes and control activities are documented.
- **Assessment of control activities**  
After documentation, a review is performed to verify whether the described controls are capable of adequately covering the risks. In the subsequent test phase, samples are taken to test whether, in practice, the controls were executed as described and effective.
- **Monitoring of control weaknesses**  
The managers responsible receive reports on any control weaknesses identified and their resolution, and an interdisciplinary committee investigates their relevance for the BASF Group. The Board of Executive Directors and the Audit Committee are informed if control weaknesses with a considerable impact on financial reporting are identified. Only after material control weaknesses have been resolved does the company's managing director confirm the effectiveness of the internal control system.

### – Internal confirmation of the internal control system

All managing directors and chief financial officers of each consolidated Group company must confirm to the Board of Executive Directors of BASF SE every half-year and at the end of the annual cycle, in writing, that the internal control system is effective with regard to accounting and reporting.

## Short-term opportunities and risks

### Development of demand

The development of our sales markets is one of the strongest sources of opportunities and risks. More details on our assumptions regarding short-term growth rates for the global economy, regions and key customer industries, such as the chemicals, automotive and construction sectors, can be found under Economic Environment in 2020 on pages 133 to 135.

We also consider risks from deviations in assumptions. A significant macroeconomic risk arises from the possibility that measures to contain the coronavirus are kept in place for a longer period of time or expanded, and that Chinese and global economic growth continues to slow as a result. A further escalation of the trade conflicts between the United States and its trade partners pose additional macroeconomic risks. Both can have a considerable impact on demand for intermediate goods for industrial production and demand for investment goods. This would have an effect on emerging markets that export raw materials as well as on advanced economies that specialize in technological goods. Risks to the global economy would also be posed by the possible escalation of geopolitical conflicts.

Weather-related influences can result in positive or negative effects on our business, particularly in the Agricultural Solutions segment.

### Margin volatility

Margin risks for the BASF Group primarily result from a further decline in margins in the Chemicals and Materials segments. New

capacities or raw materials shortages could also increase margin pressure on a number of products and value chains. This would have a negative effect on our EBIT.

Since the merger of the oil and gas businesses of Wintershall and DEA, the contribution attributable to BASF is included in income from operations (EBIT) through income from companies accounted for using the equity method. This has a compensating effect on margin pressure in the chemicals business if oil and gas prices rise. The year's average oil price for Brent crude was \$64 per barrel in 2019, compared with \$71 per barrel in the previous year. For 2020, we anticipate an average oil price of \$60 per barrel. We therefore expect price levels for the raw materials and petrochemical basic products that are important to our business to remain constant.

### Competition

We continuously enhance our products and solutions in order to maintain competitive ability. We monitor the market and the competition, and try to take targeted advantage of opportunities and counter emerging risks with suitable measures. Aside from innovation, key components of our competitiveness are our ongoing cost management and continuous process optimization.

### Regulation and political risks

Risks for us can arise from intensified geopolitical tensions, new trade sanctions, stricter emissions limits for plants or energy, and climate laws. In addition, risks to the BASF Group can be posed by further regulations in key customer industries or on the use or registration of agricultural and other chemicals.

Brexit has given rise to economic and political uncertainties. At this point in time, it is not yet clear what the future relationship between the European Union and the United Kingdom will look like after the transition phase and what specific consequences this will have for our sites, our supply chains and the regulatory environment. A cross-divisional Brexit team has been established to prepare the BASF organization for various scenarios and enable it to promptly

react to political decisions. Together with our operating units, suppliers, customers and logistics partners, we have identified problems and steps to avoid supply chain disruptions, especially in the event of a hard Brexit. Alternative logistics concepts include, for example, leasing additional warehouse space, establishing consignment warehouses or technical expansions in our ERP systems to be able to react to additional customs requirements on the systems side as well.

Political measures could also give rise to opportunities. For example, we view measures around the world to increase energy efficiency as an opportunity for increased demand for our products, such as our insulation foams for buildings, battery materials for electromobility, or our solutions for wind turbines. Our broad product portfolio enables us to offer alternatives if chemicals have to be substituted as a result of restrictions in connection with the REACH chemicals regulation or new standards in our customers' industries.

### Purchasing and supply chain

We minimize procurement risks through our broad portfolio, global purchasing activities and the purchase of raw materials on spot markets. If possible, we avoid procuring raw materials from a single supplier. When this cannot be avoided, we try to foster competition or we knowingly enter into this relationship and assess the consequences of potential nondelivery. We continuously monitor the credit risk of important business partners.

Around the world, the frequency and intensity of extreme weather conditions (such as high/low water levels on rivers or hurricanes) are subject to change as a result of climate change. We address the risk of supply interruptions on the procurement and sales side caused by extreme weather conditions by switching to unaffected logistics carriers and the possibility of falling back on unaffected sites within our global Verbund. We can no longer rule out the effects of extreme low-water situations caused by climate change at our Verbund site in Ludwigshafen, Germany. In 2019, we therefore implemented a package of measures including the development of an early warning

system for low water levels, making loading stations more flexible and time chartering ships with high load capacities in the case of low water. These measures can be deployed immediately and make extremely long periods of low water on the Rhine River, like the one in 2018, more manageable.

### Production and investments

We try to prevent unscheduled plant shutdowns by adhering to high technical standards and by continuously improving our plants. We reduce the effects of an unscheduled shutdown on the supply of intermediate and end products through diversification within our global production Verbund.

In the event of a production outage – caused by an accident, for example – our global, regional or local emergency response plans and crisis management structures are engaged, depending on the impact scope. Every region has crisis management teams on a local and regional level. They not only coordinate the necessary emergency response measures, they also initiate the immediate measures for damage control and resumption of normal operations as quickly as possible.

Crisis management also includes dealing with extreme weather conditions such as hurricanes (for example, at the sites on the Gulf of Mexico in Freeport, Texas, and Geismar, Louisiana) or significantly elevated water temperatures in rivers due to extended heat waves, which limit the available cooling capacity (for example, at the Ludwigshafen site in Germany). Appropriate precautions are taken at the sites in the case of a potential change in risk in connection with climate change. For example, the Verbund site in Ludwigshafen, Germany, implemented a package of measures in 2019 to increase cooling capacity, including expanding and optimizing the central recooling plants and optimizing cooling water flows. These are capable of avoiding production outages due to extreme heatwaves like the one in 2018.

Short-term risks from investments can result from, for example, technical malfunctions or schedule and budget breaches. We counter these risks with highly experienced project management and controlling.

### Acquisitions, divestitures and cooperations

We constantly monitor the market in order to identify possible acquisition targets and develop our portfolio appropriately. In addition, we work together in collaborations with customers and partners to jointly develop new, competitive products and applications.

Opportunities and risks arise in connection with acquisitions and divestitures from the conclusion of a transaction, or it being completed earlier or later than expected. They relate to the regular earnings contributions gained or lost as well as the realization of gains or losses from divestitures if these deviate from our planning assumptions.

[For more information on opportunities and risks from acquisitions and divestitures in 2019, see page 43](#)

### Personnel

Due to BASF's worldwide compensation principles, the development of personnel expenses is partly dependent on the amount of variable compensation, which is linked to the company's success, among other factors. The correlation between variable compensation and the success of the company has the effect of minimizing risk. Another factor is the development of interest rates for discounting pension obligations. Furthermore, changes to the legal environment of a particular country can have an impact on the development of personnel expenses for the BASF Group. For countries in which BASF is active, relevant developments are therefore constantly monitored in order to recognize risks at an early stage and enable BASF to carry out suitable measures.

[For more information on our compensation system, see page 130](#)

[For more information on risks from pension obligations, see page 145](#)

### Information technology risks

BASF relies on a large number of IT systems. Their nonavailability, violation of confidentiality or the manipulation of data in critical IT systems and applications can all have a direct impact on production and logistics processes. The threat environment has changed in recent years, as attackers have become better organized, use more sophisticated technology, and have far more resources available. If data are lost or manipulated, this can, for example, negatively affect plant availability, delivery quality or the accuracy of our financial reporting. Unauthorized access to sensitive data, such as personnel records or customer data, competition-related information or research results, can result in legal consequences or jeopardize our competitive position. This would also be accompanied by the associated loss of reputation.

To minimize such risks, BASF uses globally uniform processes and systems to ensure IT availability and IT security, such as stable and redundantly designed IT systems, backup processes, virus and access protection, encryption systems as well as integrated, Group-wide standardized IT infrastructure and applications. The systems used for information security are constantly tested, continuously updated, and expanded if necessary. In addition, our employees receive regular training on information and data protection. IT-related risk management is conducted using Group-wide regulations for organization and application, as well as an internal control system based on these regulations.

BASF also established the Cyber Defense Center in 2015, is a member of Cyber Security Sharing and Analytics e.V. (CSSA), and a founding member of the German Cybersecurity Organization (DCSO) together with Allianz SE, Bayer AG and Volkswagen AG. BASF has also established an information security management system and is certified according to ISO/IEC 27001:2013.

### Legal disputes and proceedings

We constantly monitor current and potential legal disputes and proceedings, and regularly report on these to the Board of Executive Directors and Supervisory Board. In order to assess the risks from current legal disputes and proceedings and any potential need to recognize provisions, we prepare our own analyses and assessments of the circumstances and claims considered. In addition, in individual cases, we consider the results of comparable proceedings and, if needed, independent legal opinions. Risk assessment is particularly based on estimates as to the probability of occurrence and the range of possible claims. These estimates are the result of close cooperation between the relevant operating and functional units together with the Legal and Finance units. If sufficient probability of occurrence is identified, a provision is recognized accordingly for each proceeding. Should a provision be unnecessary, general risk management continues to assess whether these litigations nevertheless represent a risk for the EBIT of the BASF Group.

We use our internal control system to limit risks from potential infringements of rights or laws. For example, we try to avoid patent and licensing disputes whenever possible through extensive clearance research. As part of our Group-wide Compliance Program, our employees receive regular training.

### Financial opportunities and risks

The management of liquidity, currency and interest rate risks is conducted in the Treasury unit. The management of commodity price risks takes place in the Procurement & Supply Chain Services functional unit or in appropriately authorized Group companies. Detailed guidelines and procedures exist for dealing with financial risks. Among other things, they provide for the segregation of trading and back office functions.

As a part of risk management, activities in countries with transfer restrictions are continuously monitored. This includes, for example, regular analysis of the macroeconomic and legal environment,

shareholders' equity and the business models of the operating units. The chief aim is the reduction of counterparty, transfer and currency risks for the BASF Group.

### Exchange rate volatility

Our competitiveness on global markets is influenced by fluctuations in exchange rates. For BASF's sales, opportunities and risks arise in particular when the U.S. dollar exchange rate fluctuates. A full-year appreciation of the U.S. dollar against the euro by \$0.01, which could result from a macroeconomic slowdown, would increase the BASF Group's EBIT by around €40 million, assuming other conditions remain the same. On the production side, we counter exchange rate risks by producing in the respective currency zones.

Financial currency risks result from the translation of receivables, liabilities and other monetary items in accordance with IAS 21 at the closing rate into the functional currency of the respective Group company. In addition, we incorporate planned purchase and sales transactions in foreign currencies in our financial foreign currency risk management. These risks are hedged using derivative instruments, if necessary.

### Interest rate risks

Interest rate risks result from potential changes in prevailing market interest rates. These can cause a change in the fair value of fixed-rate instruments and fluctuations in the interest payments for variable-rate financial instruments, which would positively or negatively affect earnings. To hedge these risks, interest rate swaps and combined interest rate and currency derivatives are used in individual cases.

In addition to market interest rates, BASF's financing costs are determined by the credit risk premiums to be paid. These are mainly influenced by our credit rating and the market conditions at the time of issue. In the short to medium term, BASF is largely protected from the possible effects on its interest result thanks to the balanced maturity profile of its financial indebtedness.

### Risks from metal and raw materials trading

In the catalysts business, BASF employs commodity derivatives for precious metals and trades precious metals on behalf of third parties and on its own account. Appropriate commodity derivatives are also traded to optimize BASF's supply of refinery products, gas and other petrochemical raw materials. To address specific risks associated with these non-operating trades, we set and continuously monitor limits with regard to the type and scope of the deals concluded.

### Liquidity risks

Risks from fluctuating cash flows are recognized in a timely manner as part of our liquidity planning. We have access to extensive liquidity at any time thanks to our good ratings, our unrestricted access to the commercial paper market and committed bank credit lines. In the short to medium term, BASF is largely protected against potential refinancing risks by the balanced maturity profile of its financial indebtedness as well as through diversification in various financial markets.

[For more information on the maturity profile of our financial indebtedness, see the explanations in the Financial Position on page 55 and the Notes to the Consolidated Financial Statements from page 261 onward](#)

### Risk of asset losses

We limit country-specific risks with measures based on internally determined country ratings, which are continuously updated to reflect changing environment conditions. We selectively use investment guarantees to limit specific country-related risks. We lower credit risks for our financial investments by engaging in transactions only with banks with good credit ratings and by adhering to fixed limits. Creditworthiness is continuously monitored and the limits are adjusted accordingly. We reduce the risk of default on receivables by continuously monitoring the creditworthiness and payment behavior of our customers and by setting appropriate credit limits. Risks are also limited through the use of credit insurance and bank guarantees. Due to the global activities and diversified customer structure of the BASF Group, there are no major concentrations of credit default risk.

### Impairment risks

Asset impairment risk arises if the assumed interest rate in an impairment test increases, the predicted cash flows decline, or investment projects are suspended. Currently, we consider the impairment risk for assets such as customer relationships, technologies and trademarks, goodwill, and equity-accounted investments to be immaterial.

### Long-term incentive program for senior executives

Our senior executives have the opportunity to participate in a share price-based compensation program. The need for provisions for this program varies according to the development of the BASF share price and the MSCI World Chemicals Index; this leads to a corresponding increase or decrease in personnel costs.

[For more information on the long-term incentive program, see the Notes to the Consolidated Financial Statements from page 284 onward](#)

### Risks from pension obligations

Most employees are granted company pension benefits from either defined contribution or defined benefit plans. We predominantly finance company pension obligations externally through separate plan assets. This particularly includes BASF Pensionskasse VVaG and BASF Pensionstreuhand e.V. in Germany, in addition to the large pension plans of our Group companies in North America, the United Kingdom and Switzerland. To address the risk of underfunding due to market-related fluctuations in plan assets, we have investment strategies that align return and risk optimization to the structure of the pension obligations. Stress scenarios are also simulated regularly by means of portfolio analyses. An adjustment to the interest rates used in discounting pension obligations leads immediately to changes in equity. To limit the risks of changing financial market conditions as well as demographic developments, employees have, for a number of years now, been almost exclusively offered defined contribution plans for future years of service. Some of these contribution plans include minimum interest guarantees. If the pension fund cannot generate this, it must be provided by the employer. A permanent continuation of the low interest rate environ-

ment could make it necessary to recognize pension obligations and plan assets for these plans as well.

### Long-term opportunities and risks

#### Long-term demand development

We assume that growth in chemical production (excluding pharmaceuticals) will roughly track global gross domestic product over the next five years and be slightly below the previous five-year average. Through our market-oriented and broad portfolio, which we will continue to strengthen in the years ahead through investments in new production capacities, research and development activities and acquisitions, we aim to achieve volumes growth that slightly exceeds this market growth. Should global economic growth see unexpected, considerable deceleration, due for example to an ongoing weak period in the emerging markets, protectionist tendencies or to geopolitical crises, the expected growth rates could prove too ambitious.

[For more information on the corporate strategy, see page 24 onward](#)

#### Development of competitive and customer landscape

We expect competitors from Asia and the Middle East in particular to gain increasing significance in the years ahead. Furthermore, we predict that many producers in countries rich in raw materials will expand their value chains. We counter this risk through active portfolio management.

We continuously improve our processes in order to remain competitive through our operational excellence. Our strategic Excellence Program serves the same purpose. This is expected to contribute €2 billion to EBITDA annually from the end of 2021 onward compared with baseline 2018.

In order to achieve lasting profitable growth, tap into new market segments and make our customers more successful, our research

and business focus is on highly innovative business areas, some of which we enter into through strategic cooperative partnerships.

[For more information on our Excellence Program, see page 20 onward](#)

### Innovation

The central research areas Process Research & Chemical Engineering, Advanced Materials & Systems Research and Bioscience Research serve as global platforms headquartered in our regions: Europe, Asia Pacific and North America. Together with the development units in our operating divisions, they form the core of the global Know-How Verbund. Our strong regional presence opens up opportunities to participate in local innovation processes and gain access to local talent. We optimize the effectiveness and efficiency of our research activities through our global Know-How Verbund.

Research activities funded by the BASF Group promote the targeted development and enhancement of key technologies as well as the establishment of new business areas. Focus areas in research are determined based on their strategic relevance for BASF, above and beyond existing business areas.

We also address the risk of the technical or economic failure of research and development projects by maintaining a balanced and comprehensive project portfolio, as well as through professional, milestone-based project management.

Potential applications of digital technologies and solutions along the entire value chain are investigated in both the operational and functional divisions as well as by cross-divisional teams, and tested in dedicated pilot projects. They are supported here by the Digitalization & Information Services unit. We analyze the opportunities and risks of digitalization in Production, Logistics, Research & Development and for business models as well as in corporate functions such as Finance, Human Resources, Procurement & Supply Chain Services, Legal, Taxes, Insurance & Intellectual Property. The opportunities and risks of digitalization are steered by the operational and functional divisions.

The trust of customers and consumers is essential for the successful introduction of new technologies. That is why we enter into dialog with our stakeholders at an early stage of development. The trend toward increased sustainability requirements in our customer industries continues. Our aim is to leverage the resulting opportunities in a growing market even more effectively in the future with innovations. This is why we applied the Sustainable Solution Steering method, which is used to evaluate the sustainability of our product portfolio, to assessments of innovation projects, and integrated it into an early stage of our research and development processes as well as the development of our business strategies. In this way, we want to benefit from the higher profitability of our Accelerator solutions compared with the rest of our evaluated portfolio. At the same time, we reduce reputational and financial risks by phasing out products for which we have identified substantial sustainability concerns ("Challenged" products) within five years of initial classification as such at the latest. We develop action plans for these products at an early stage to minimize any potential financial risks. These can include research projects, reformulations or even replacing one product with another.

[For more information on innovation and digitalization, see page 31 onward](#)

### Portfolio development through investments

Our decisions on the type, scope and locations of our investment projects are based on assumptions related to the long-term development of markets, margins and costs, as well as raw material availability and country, currency and technology risks. Opportunities and risks arise from potential deviations in actual developments from our assumptions.

We expect the increase in chemical production in emerging markets in the coming years to remain above the global average. This will create opportunities that we want to exploit by expanding our local presence.

[For more information on our investment plans, see page 138](#)

### Acquisitions

In the future, we will continue to expand and refine our portfolio through acquisitions that promise above-average profitable growth as part of the BASF Verbund, are innovation-driven or offer a technological differentiation, that help to reach a relevant market position, and make new, sustainable business models possible.

The evaluation of opportunities and risks plays a significant role during the assessment of acquisition targets. A detailed analysis and quantification is conducted as part of due diligence. Examples of risks include increased staff turnover, delayed realization of synergies, or the assumption of obligations that were not precisely quantifiable in advance. If our expectations in this regard are not fulfilled, risks could arise, such as the need to impair intangible assets; however, there could also be opportunities, for example, from additional synergies.

[For more information on our acquisitions, see page 43 onward](#)

### Recruitment and long-term retention of qualified employees

BASF anticipates growing challenges in attracting qualified employees in the medium and long term due to demographic change, especially in North America and Europe. As a result, there is an increased risk that job vacancies may not be filled with suitable applicants, or only after a delay. We address these risks with measures to integrate diversity, employee and leadership development, and intensified employer branding. At local level, demographic management includes succession planning, knowledge management and offerings to improve the balance between personal and professional life and promote healthy living. This increases BASF's appeal as an employer and retains our employees in the long term.

[For more information on the individual initiatives and our goals, see page 126 onward](#)

### Sustainability

Opportunities and risks that could arise from material sustainability topics can only rarely be measured in specific financial terms and have an impact on business activities, especially in the medium to long term.

As part of our general risk management process, we also identify and assess relevant risks arising from sustainability topics such as climate change. Our sustainability management helps to minimize risks and opens up new opportunities to market more sustainable products. We reduce potential risks in the areas of environmental protection, safety and security, health protection, product stewardship, compliance, supplier relationships and labor and social standards by setting ourselves globally uniform requirements. These often go beyond local legal requirements.

We verify compliance with these standards through internal monitoring systems such as global surveys or audits. In 2019, for example, suppliers were audited for sustainability at a number of sites. All employees, managers and Board members are required to adhere to our global Code of Conduct, which defines a binding framework for our activities. The monitoring systems are complemented by grievance mechanisms such as our compliance hotlines.

Risk management in the area of sustainability also includes climate-related risks and opportunities. We consider risks for companies in connection with the transition to a low-carbon economy (transition risks) as well as physical risks as defined by the Task Force on Climate-related Financial Disclosures (TCFD). For BASF as an energy-intensive company, climate-related risks arise particularly from regulatory changes, such as in carbon prices through emissions trading systems, taxes or energy legislation. In addition, BASF's emissions footprint and intensity could lead to a negative perception and reduced appeal among external stakeholders such as customers or investors. We counter these risks with our carbon management measures and by transparently disclosing our positions on and contributions to climate protection (such as political demands, progress in the implementation of our climate strategy and how our products help to protect the environment) in publicly accessible sources (such as this annual report or on the BASF website) and in direct dialog with external stakeholders. Physical risks to our production and our supply chain are addressed by our risk management in production and in procurement. Our broad product portfolio

also includes solutions for the circular economy and climate protection (such as insulation foams for buildings, materials for electromobility and bio-based products). Increased social awareness offers additional market opportunities for these products. We are working with numerous scientific and public organizations and initiatives on solutions for sustainable agriculture that meet economic, ecological, and social demands over the long term.

Our decentralized specialists use a central decision tree to document reportable sustainability risks within the meaning of section 289b et seq. of the German Commercial Code. No reportable residual net risks within the meaning of section 289b et seq. of the German Commercial Code were identified for 2019.

[🔗 For more information on sustainability management, see page 36 onward](#)

[For more information on energy and climate protection, see page 116 onward](#)

[For more information on opportunities and risks from energy policies, see page 142](#)

[🗨️ For more information on our positions on and contributions to climate protection, see \[basf.com/climate\\\_protection\]\(https://www.basf.com/climate\_protection\)](#)