Forecast
Opportunities and risks report

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 here is to avoid risks that pose a threat to BASF’s continued existence and to make improved managerial decisions to create lasting value. We understand risk to be any event that can negatively impact the achievement of our short-term operational or long-term strategic goals. We define opportunities as possible successes that exceed our defined goals.

In order to effectively measure and manage identified opportunities and risks, we quantify these in terms of probability and economic impact in the event they occur. 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 risks and opportunities arise from overall economic developments and volatility in exchange rates and margins
- No threat to continued existence of BASF

We expect the global economy to continue to grow in the next two years. We continue to see significant risks in a considerable slowdown of the Chinese economy. Such a development would negatively impact demand for intermediate goods and investment goods, and affect emerging markets that export raw materials as well as the advanced economies. Any escalation of geopolitical conflicts also poses risks to the global economy. Important opportunities and risks for our earnings are also associated with uncertainty regarding growth in Europe, the development of key customer industries, and volatility in foreign currency exchange rates and margins.

According to our assessment, there continue to be 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 another global economic crisis.

Ultimately, however, residual risks remain in all entrepreneurial activities which even comprehensive risk management cannot exclude.
Management’s Report  
Forecast — Opportunities and risks report

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 corporate units Finance; Corporate Controlling; Strategic Planning & Controlling; Legal, Taxes, Insurance & Intellectual Property; and the Chief Compliance Officer. They coordinate the risk management process at a Group level 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 and corporate units advances the implementation of appropriate risk management practices in daily operations.
- The management of specific opportunities and risks is largely delegated to the business units and is steered at a local level. Risks relating to exchange rates and raw material prices are an exception. In this case, there is an initial consolidation at a Group-wide 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 additional compliance officers worldwide. The CCO regularly reports to the Board of Executive Directors on progress in the program’s implementation as well as on any significant results. Furthermore, the CCO provides a status report to the Supervisory Board’s Audit Committee in at least one of its meetings each 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.

Instruments

- The Risk Management Process Manual, applicable throughout the Group, forms the framework for risk management and is implemented by the business units according to their particular business conditions.
- A catalog of opportunity and risk categories helps to identify all relevant opportunities and risks as comprehensively as possible.
- We use standardized evaluation and reporting tools for the identification and assessment of risks. The aggregation of opportunities, risks and sensitivities at the business and Group level using a Monte Carlo simulation helps us to identify effects and trends across the company.
- Company management is informed about operational opportunities and risks (observation period of up to one year) in the monthly management report produced by the Corporate Controlling unit. In addition, the corporate units Corporate Controlling and Finance provide information twice a year about the aggregated opportunity/risk exposure of the BASF Group. Furthermore, if a new individual risk is identified which bears reputational risks or has a more than
€10 million impact on earnings, it must be immediately reported.

– As part of our strategy development, the Strategic Planning & Controlling unit conducts strategic opportunity/risk analyses with a ten-year assessment period. These analyses are annually reviewed as part of strategic controlling and are adapted if necessary.

– Our Group-wide Compliance Program serves 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 on our Group-wide Compliance Program, see page 136 onward

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

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

The Consolidated Financial Statements are prepared by a unit in the corporate division Finance. BASF Group’s accounting process is based on a standardized 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. 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 for the structured and Group-wide uniform evaluation of the internal control system in financial reporting.

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 standardized questionnaire and presented in a central risk catalog.

Moreover, a centralized selection process identifies companies that are exposed to particular risks, that have a material impact on 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 annual evaluation process.

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 and evidenced by sample taking.

- 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 the control activities
  After documentation, a test is performed to verify whether the described controls are capable of adequately mitigating 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 once control weaknesses have been identified that have a considerable impact on financial reporting. Only after material control weaknesses have been resolved does the company’s managing director confirm the effective 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

- Development of our sales markets among greatest opportunities and risks
- Negative impact from economic slowdown in China and escalation of geopolitical conflicts possible

The development of our sales markets is one of the strongest drivers 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 from pages 121 to 123. In accordance with this scenario, we are planning to achieve volumes growth in all segments excluding the effects of acquisitions and divestitures.

In addition to this scenario, we also consider risks from deviations in assumptions. We continue to see a significant macroeconomic risk in an increased slowdown of the Chinese economy, which would have considerable impact on demand for intermediate goods for industrial production as well as 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.

Should the macroeconomic environment develop more weakly than we predict, a further drop in the price of oil can be expected. In this case, we would also expect the euro to depreciate relative to the U.S. dollar as compared with our planning assumptions, as the eurozone’s economy shows a high level of dependency on exports and, in times of global economic weakness, the U.S. dollar is preferred by portfolio investors as a safe haven.

Weather-related influences can result in positive or negative effects on our crop protection business.

Margin volatility

- Possible oversupply could lead to lower margins in some value chains
- Opportunities and risks from decreasing raw material costs

We generally anticipate stable margins in 2016. For some products and value chains, it is possible that margin pressure could be increased by new capacities, for example. This would have a negative effect on our EBIT.

The year’s average oil price for Brent crude was around $52 per barrel in 2015, substantially lower than in the previous year. For 2016, we anticipate an average oil price of $40 per barrel. We therefore expect the low price levels to continue for the raw materials and petrochemical basic products that are important to our business. Yet an oil price level below the expected average would pose risks for our oil and gas business, whose EBIT dips by approximately €20 million for every $1 decrease in the average annual barrel price of Brent crude.

Regulation and political risks

- Risks posed by factors such as regulation of chemicals use
- Energy policy gives rise to both risks and opportunities

Due to the European chemicals regulation REACH, which came into force in 2007, BASF and our European customers face the risk of being placed at a disadvantage to our non-European competitors due to the cost-intensive test and registration procedures.

Other risks for us would arise from further regulation, for example, of the use of chemicals; the intensification of geopolitical tensions; the destabilization of political systems; and the imposition of trade barriers, such as sanctions in Ukraine crisis or OPEC quotas for oil production. Furthermore, we are closely observing the political situation in Argentina, where economic policy reforms could revitalize the business environment.

The German Renewable Energy Act (EEG) is poised for reform in 2016. This regulates the expansion of electricity generation from renewables and passing on costs to energy customers through the EEG surcharge. Currently, existing power plants for self-generated energy are not subject to the EEG surcharge. Consequently, there is currently no additional financial burden for the electricity BASF generates in its existing power plants. The upcoming EEG amendment, however, means that the German federal government needs to review, and possibly revise, this matter in accordance with the E.U. Commission’s mandate. It is possible that these plants would need to pay a portion of the EEG surcharge in the future, which would negatively affect the competitive ability of the affected production sites. A proportional EEG surcharge of 20% would translate into additional charges of €75 million per year (before taxes), and the complete EEG surcharge would lead to expenses of around €400 million each year. It is important that negotiations between the federal government and the E.U. Commission find a solution that avoids putting a financial burden on energy customers.

We view the worldwide support for the expansion of renewable energy and measures to increase energy efficiency as an opportunity for increased demand for our products. For example, we offer diverse solutions for wind turbines in addition to insulation foams for buildings. Our catalysts business benefits from the tightening of automobile emissions regulations.
Production and delivery bottlenecks

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

We minimize procurement risks through our broad portfolio, global purchasing activities and the purchase of raw materials on spot markets, as well. 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.

Information technology risks

- Global procedures and systems for IT security
- Regular training for employees
- Cyber Defense Center established

BASF relies on a 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 tools, and have far more resources available. If data are lost or manipulated, this can, for example, negatively affect process safety and the accuracy of our financial reporting. Unauthorized access to sensitive data, such as personnel records, 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 has implemented globally applicable processes and systems to ensure IT security, such as stable and redundantly designed IT systems, backup processes, virus and access protection and 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 a Cyber Defense Center in 2015; is a member of the Cyber Security Sharing and Analytics e.V. (CSSA); and is a founding member of the German Cyber Security Organization (DCSO) together with Allianz SE, Bayer AG and Volkswagen AG.

Litigation and claims

- Regular reporting on risks from litigation
- Risk assessment based on probability of occurrence

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 analysis and assessment 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 affected operating and functional units together with the Legal and Finance departments. If sufficient probability is identified, a provision is recognized accordingly for each dispute. Should a provision be unnecessary, general risk management continues to assess whether these litigations nevertheless present 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 competence center or in the 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.
Exchange rate volatility

- Opportunities and risks especially from U.S. dollar exchange rate fluctuations

Our competitiveness on global markets is influenced by fluctuations in exchange rates. For BASF’s purchasing, opportunities and risks arise in particular when the U.S. dollar exchange rate fluctuates. A full-year rise in the value of the U.S. dollar/euro exchange rate by $0.01 would result in an increase of around €40 million in BASF’s EBIT, assuming other conditions remain the same. On the production side, we mitigate foreign currency risks by having production sites 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

- Market interest rates and credit risk premiums to be paid have major impact on financing costs

Interest rate risks result from potential changes in prevailing market interest rates. These can cause a change in the present value of fixed-rate instruments and fluctuations in the interest payments for variable-rate 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 rate thanks to the well-balanced maturity profile of its financial indebtedness.

Risk of asset losses

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. In addition, we use our knowledge of the markets for crude oil and oil products to generate earnings from the trade of raw materials. To address specific risks associated with these trades, which are not part of our operating business, we set and continuously monitor limits with regard to the type and size 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 a balanced maturity profile for financial indebtedness as well as through diversification in various financial markets.

For more on financial risks, see the Notes to the Consolidated Financial Statements from page 210 onward

For more on the maturity profile of our financial indebtedness, see the Notes to the Consolidated Financial Statements on page 206

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 export credit insurance and 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. The credit ratings are 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. Due to the global activities and diversified customer structure of the BASF Group, there are no major concentrations of credit default risk. Risks are also limited through the use of credit insurance and bank guarantees.

Impairment risks

The risk of an asset impairment occurs if the assumed interest rate in an impairment test increases or the predicted cash flows decline. In the current business environment, we consider the risk of impairment of individual assets such as customer relationships, technologies and brands, as well as goodwill, to be nonmaterial. Nevertheless, a continuing decline in the price of oil below our assumed planning level would result in impairment risks for the Oil & Gas segment’s assets, especially the recently acquired fields measured at fair value.

Long-term incentive program for senior executives

Our 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.
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 been almost exclusively offered defined contribution plans for future years of service in recent years.

Long-term opportunities and risks

Long-term demand development

- Annual average growth of nearly 4% expected for global chemical production

In our “We create chemistry” strategy, we assume that chemical production (excluding pharmaceuticals) will grow by nearly 4% each year through 2020. Chemical production would therefore grow considerably faster than global gross domestic product and at about the same level as 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 capacity, research and development activities and acquisitions, we aim to achieve sales 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 or to geopolitical crises, these goals could prove too ambitious. As a result of our high degree of diversification across various customer industries and regions, we would still expect our growth to be above the market average, even under these conditions.

Development of the competitive and customer landscape

- Opportunities from active portfolio management and focus on innovative business areas

We expect competitors from emerging markets to gain considerable significance in the years ahead. Furthermore, we predict that many raw material suppliers will expand their value chains.
Portfolio development through investments

- **2016–2020: More than a quarter of our investing volume to go into emerging markets**

We expect the increase in chemical production in emerging markets in the coming years to be significantly above the global average. This will create opportunities that we want to exploit by expanding our presence in these economies; therefore, more than a quarter of our investment volume will be spent in emerging markets over the next five years. We also want to intensify investment in North America in light of the attractive growth prospects and low raw material prices: for example, we are constructing an ammonia production plant with Yara in Freeport, Texas. In addition, we are exploring an investment in a world-scale methane-to-propylene complex on the U.S. Gulf Coast.

Our decisions on the type, size 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 when actual developments deviate from our assumptions.

In the implementation phase, we use our experience in project management and controlling to minimize short-term technical risks as well as risks from cost overruns or missed deadlines.

For more on our investment plans, see page 125 onward

Acquisitions

- **Detailed assessment of opportunities and risks as part of due diligence**

In the future, we will continue to refine our portfolio through acquisitions that promise above-average profitable growth, are innovation-driven and offer added value for our customers while reducing the cyclicality of our earnings.

The evaluation of opportunities and risks already plays a significant role during the assessment of potential acquisition targets. A detailed analysis and quantification are conducted as part of due diligence. Examples of risks include increased staff turnover, delayed realization of synergies, and 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 on our acquisitions, see page 39 onward

Recruitment and long-term retention of qualified employees

- **Risk of retirement-related loss of expertise**

BASF, too, is adjusting to a medium to long-term shortage of skilled employees due to demographic changes, 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 through our Best Team Strategy and the global initiatives derived from it, covering demographic and knowledge management, Diversity + Inclusion, employee and leadership development, intensified employer branding, and supplementary regional initiatives. With these measures, we increase BASF’s attractiveness as an employer and retain our employees in the long term.

For more on the individual initiatives and our goals, see page 42 onward

Sustainability

- **Identification of upcoming opportunities and risks**
- **Risk management established for material aspect “energy and climate”**

BASF uses sustainability management tools to identify upcoming opportunities and risks that arise in connection with the topic areas environment, society and governance. Their long-term effect on our business activities and their associated relevance are assessed through such instruments as our materiality analysis, along with our experiences from continuous dialog with our stakeholders. We have established global monitoring systems which also include our suppliers – these enable us to check adherence to laws and our voluntary commitments in the areas of environment, safety, security, society, and governance.

In terms of upcoming opportunities and risks, material aspects identified included: energy and climate, water, resources and ecosystems, responsible production, and employment and employability. In addition to specific requirements for these aspects, discussion is growing surrounding the internalization of external effects.

The material aspect “energy and climate” is analyzed as part of our risk management process in order to allow us to identify, assess and direct climate-related risks and opportunities.

For BASF as an energy-intensive company, opportunities and risks arise particularly from regulatory changes in carbon prices through emissions trading systems, taxes or energy legislation.

For more on sustainability management, see page 31 onward

For more on energy and climate protection, see page 105 onward

For more on opportunities and risks from energy policies, see page 116
Economic environment in 2016

The global economy will presumably grow by 2.3% in 2016, about as fast as in 2015 (+2.4%). Growth in the European Union will remain comparable with prior-year levels. In the United States, growth is expected to slow down somewhat. We forecast that Chinese economic growth will continue to decelerate slightly and that the recession will ease up somewhat in Russia and Brazil. Global chemical production is likely to grow by 3.4% in 2016, slower than 2015 (+3.6%). The global economy continues to face increasing risks. For 2016, we assume an average price of $40 per barrel for Brent blend crude oil and an exchange rate of $1.10 per euro.

Trends in the global economy in 2016

- Stable growth expected for the European Union
- Economic cooldown in China with dampening effects on Asia’s emerging markets
- Recovery of Japanese economy unlikely
- Continued, but milder, deceleration predicted for South America

For 2016, we anticipate growth in the European Union’s economy on approximately the same level as the previous year. Low oil prices, largely stable prices, reduced interest rates and favorable euro exchange rates will support this development, although these factors do not represent additional growth stimulus as they have already been in effect since 2015. The economy will stabilize noticeably in southern Europe. In northwestern Europe and the eastern European E.U. countries, growth will hover at prior-year levels. We expect the recession to continue in Russia and Ukraine, although the decline is likely to ease off compared with 2015.

Growth in the United States will probably slacken somewhat in the face of slower industrial growth. Benefitting from the positive job market situation and low inflation rates, private consumption will provide some stability. Experience shows that rising real estate value also has a positive effect on consumption. Increasingly better production capacity utilization along with continuing low interest rates are likely to support the propensity to invest.

In the emerging markets of Asia, we assume that growth will weaken to a moderate level overall. Gross domestic product growth will continue to slow in China. The government’s monetary and fiscal easing measures could bolster the real estate market and automotive sector, but the growth stimulus will remain modest. China’s economic cooldown will continue to negatively impact trading partners in the region. Currently, the greatest risk for the global economy would be posed by growth in China that proves even weaker than our expectations.

Japan’s gross domestic product is expected to continue growing only minimally in 2016. Despite the weak yen, the current global economic environment gives no cause to believe that exports will significantly increase. Domestic demand may also grow only modestly. The sales tax increase expected for the spring of 2017 could, however, stimulate private consumption to grow faster than usual toward the end of 2016.

For South America, we expect a continued, if somewhat weaker, decline in gross domestic product overall. Structural reforms in Argentina should revive the economy in the medium term; in the short term, however, they will weaken private demand. We therefore anticipate a slight decrease in gross domestic product. Leading indicators do not yet point to an upswing in Brazil. We nevertheless do not expect the downward trend to continue unabated, especially since the sharp depreciation of the Brazilian real will support the export business.
Outlook for key customer industries

- Same level of growth expected in global industrial production for 2016

Global industrial production will probably grow by 2.0%, no stronger than in 2015. Industry in the advanced economies will keep growing modestly, by around 1%. In the emerging markets of Asia, we anticipate industrial growth at a level somewhat below that of 2015 (+4.7%). After a decline in the previous year, we anticipate slight growth again for the remaining emerging markets in 2016 (+0.7%).

We foresee overall recovery for the transportation sector compared with 2015. After two years of dynamic development in western Europe, we assume that growth will slow down in 2016. It will probably slacken in the United States, as well. By contrast, China's automotive industry will show moderate recovery as a result of the decrease in purchase taxes for small-motor vehicles. This should mean a slight increase in automobile production in Asia's other emerging markets for this reason, as well. Slight growth in the automotive industry is also anticipated in Japan after the previous year's considerable decline. In Brazil, automobile production is likely to decrease once again and Russia's market could grow slightly at best.

Production in the energy and raw materials sector will see only marginal gains in 2016 in light of lower raw material prices and moderate growth in the global economy. We anticipate only marginal production increases in western and eastern Europe as well as in the Middle East. In Asia, domestic energy and raw material production is likely to see slight growth. We expect production to decline in North and South America.

For the construction industry, we predict stable growth rates on a global level, with regions varying widely. Construction activity will likely continue to stabilize in western Europe. Low interest rates and increased real income will be a boon to housing construction in northwestern Europe. The branch has been shrinking for years in Italy and France and could bottom out. In the United States, the industry saw a significant upswing in 2015 and the number of construction starts increased sharply. We therefore anticipate robust growth in 2016, as well. In China, however, production growth will probably continue to slow; the housing market in particular is suffering from oversupply. We expect the other Asian emerging markets to show stable growth rates in the construction industry. The South American market is likely to slightly shrink.

We assume that the consumer goods industry will grow somewhat faster than in the previous year. In Asia, demand for consumer goods is likely to remain stable; this prediction is supported by the realignment of China's economy toward a more consumer-oriented growth model and Japan's upcoming sales tax increase in 2017. We anticipate restrained growth in production in western Europe's consumer goods industries. In the United States, production growth will remain far behind private demand, as the strong U.S. dollar will favor the import of consumer goods.

The electronics industry is set to grow as fast in 2016 as it did in the previous year. We anticipate stable growth in Asia, the global center of the electronic industry. We foresee slight deceleration in China and South Korea, whereas Taiwan and Japan will probably show rising growth rates. Growth is expected to be slower in North America and stable in western Europe.

We predict solid global growth roughly comparable with prior-year levels for production in the health and nutrition sector. In Europe, we anticipate slightly higher growth rates overall. In North America, the industry is likely to be somewhat outpaced by the growth rate of gross domestic product. Growth rates in this sector will probably decline slightly in Asia, but at a high level. Production in South America will continue to decrease slightly.

For agriculture, we anticipate worldwide growth on par with the average rate of the past few years. Rising demand from China and India suggests solid production growth at home as well as in Brazil and the United States, two major exporting countries. In Europe, production growth will follow the weak regional trends in demand. The severe economic crisis in Ukraine and the ongoing conflict in the eastern part of the country will be reflected in decreasing agricultural production. The low price of oil will continue to curtail global demand for bioethanol. We expect prices for agricultural raw materials to remain under pressure in 2016.
Outlook for the chemical industry

- Global growth slightly below the level of 2015

Global chemical production (excluding pharmaceuticals) will probably grow by 3.4% in 2016, slightly slower than in 2015 (+3.6%). We expect production in the advanced economies to expand by 1.3%, somewhat slower than in the previous year (+1.6%). At 5.0%, overall growth in the emerging markets will also approximate prior-year levels.

The global growth rate of the chemical market will be largely determined by developments in China, which accounts for more than a third of worldwide production. China will presumably contribute more than two percentage points to the rate of global chemical industry growth in 2016. All growth forecasts for China are currently fraught with high levels of uncertainty; this applies to our prognosis for global chemical growth, as well.

Chemical production in the European Union is likely to grow only slowly in 2016. Demand from customer industries in the region will grow moderately, yet we do not anticipate any additional growth stimulus beyond this from the export business for Europe’s chemical producers. Overall, competitive pressure could remain high on an international level, even as European chemical sites—which in the previous year—benefit from low oil prices compared with U.S. competitors whose production is based on gas.

We expect chemical production to expand in the United States against the backdrop of solidly growing demand overall from customer industries. However, momentum let up considerably over the course of 2015, which may be reflected in a lower growth rate for 2016.

Chemical growth will decelerate somewhat overall in the emerging markets of Asia. While it will probably continue to shrink in China, it will hover around prior-year levels in the region’s other countries. The higher growth rates we expect for the automotive industry will support demand for chemicals. Slower construction activity in China will presumably have a dampening effect. In Japan, we anticipate a weak economic environment overall and minimal growth in chemical production.

The chemical industry in South America will stagnate overall. Demand is likely to remain weak in Argentina; in Brazil, it will continue to decline. In the other South American countries, however, we expect solid growth on average.

### Outlook for chemical production 2016 (excl. pharmaceuticals)

(Real change compared with previous year)

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<th>Region</th>
<th>Growth Rate</th>
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<tbody>
<tr>
<td>World</td>
<td>3.4%</td>
</tr>
<tr>
<td>European Union</td>
<td>0.9%</td>
</tr>
<tr>
<td>United States</td>
<td>1.7%</td>
</tr>
<tr>
<td>Emerging markets of Asia</td>
<td>5.9%</td>
</tr>
<tr>
<td>Japan</td>
<td>1.0%</td>
</tr>
<tr>
<td>South America</td>
<td>(0.2%)</td>
</tr>
</tbody>
</table>

### Trends in chemical production 2016–2018 (excl. pharmaceuticals)

(Average annual real change)

<table>
<thead>
<tr>
<th>Region</th>
<th>Growth Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>3.6%</td>
</tr>
<tr>
<td>European Union</td>
<td>1.1%</td>
</tr>
<tr>
<td>United States</td>
<td>2.5%</td>
</tr>
<tr>
<td>Emerging markets of Asia</td>
<td>5.9%</td>
</tr>
<tr>
<td>Japan</td>
<td>0.6%</td>
</tr>
<tr>
<td>South America</td>
<td>1.3%</td>
</tr>
</tbody>
</table>
We expect conditions to remain challenging in 2016. The global economy and industrial production will presumably grow at a level approximating that of 2015. Chemical production is likely to grow at a slower rate than in 2015. For 2016, we assume an average price of $40 for a barrel of Brent blend crude oil and an exchange rate of $1.10 per euro. The global economy continues to face increasing risks. We nevertheless aim to raise sales volumes in all segments. BASF Group sales will decline considerably, however, especially as a result of the divestiture of the gas trading and storage business as well as lower oil and gas prices. We expect income from operations before special items to be slightly below 2015 levels. This is an ambitious goal in the current volatile and challenging environment, and is particularly dependent on oil price developments.

Sales and earnings forecast for the BASF Group

- Considerable sales decline due to divestiture of gas trading and storage business
- Income from operations before special items expected at level slightly below 2015

BASF Group sales will decrease considerably in 2016. As a consequence of the asset swap with Gazprom, contributions to the Oil & Gas segment have ceased from the natural gas trading and storage business in particular. In the first three quarters of 2015, these activities contributed a total of around €10.1 billion to sales. Sales will be furthermore reduced by lower prices for oil and gas. We want to increase sales volumes in all segments, excluding the effects of acquisitions and divestitures. Income from operations before special items is expected to be slightly below 2015 levels. This is an ambitious goal in the current volatile and challenging environment, and is particularly dependent on oil price developments.

We expect EBIT to decline slightly overall in 2016. In addition to a lower level of EBIT before special items, this assumption reflects the charges expected to arise from restructuring measures. The contribution from the Oil & Gas segment is likely to shrink considerably in 2016; we anticipate a slight decrease in the chemicals business\(^1\) and a slight gain in the Agricultural Solutions segment. In Other, EBIT is forecast to rise considerably. Yet because EBIT of Other is not factored into the calculation of our EBIT after cost of capital, the BASF Group’s EBIT after cost of capital will presumably see a considerable decline. We will still earn a premium on our cost of capital. In the Performance Products, Functional Materials & Solutions, and Agricultural Solutions segments, we anticipate a considerable boost in EBIT after cost of capital.

The significant risks and opportunities that could affect our forecast are described on pages 113 to 120.

Sales and earnings forecast for the segments

Sales in the Chemicals segment are likely to decline slightly in 2016. Higher volumes in the Monomers and Intermediates divisions due to the startup of plants will not be able to offset the lower prices resulting from decreased raw material costs. We continue to anticipate intense competitive pressure, especially in the markets for MDI, TDI, acrylic acid and caprolactam. Income from operations before special items is expected to fall considerably. We foresee higher fixed costs in the Monomers and Intermediates divisions from plant startups and shrinking margins, especially in the Petrochemicals division.

In an environment that remains challenging, we plan on sales in the Performance Products segment that match prior-year levels, despite lower prices. We want to raise sales volumes in all divisions. Factors supporting this endeavor include new production capacities in the Dispersions & Pigments and Care Chemicals divisions. Income from operations before special items should slightly exceed the level of 2015, supported by strict cost discipline and measures to increase competitiveness in all divisions.

In the Functional Materials & Solutions segment in 2016, we expect demand to remain high from our key customer sectors, the automotive and construction industries, and aim to raise sales volumes in all divisions. We nevertheless foresee negative effects from the continuing decrease in precious metal prices and overall sales that remain at a prior-year level. We aim to slightly raise our income from operations before special items.

\(^1\) Our chemicals business comprises the Chemicals, Performance Products and Functional Materials & Solutions segments.
For 2016, we are anticipating continued slow market growth in the Agricultural Solutions segment and high exchange rate volatility in some of our key growth markets. Despite this difficult economic environment, we aim to increase our sales volumes, especially of innovative herbicides. Through increased sales and continued strict cost management, sales and income from operations before special items should both improve slightly.

The Oil & Gas segment is likely to see expanded production, but a considerable drop in sales and income from operations before special items compared with 2015. Lower prices for oil and gas, together with the divestiture of our gas trading and storage business, are the major factors behind this forecast. Moreover, we will achieve lower sales and earnings from our share in the Yuzhno Russkoye natural gas field: In 2016, the excess amounts produced over the last ten years will be compensated, as contractually agreed with our partner, Gazprom.

In Other, sales are likely to decline considerably due to supply contracts in Asia that expired at the end of 2015. A considerable rise is expected in income from operations before special items, which should result in part from an improved currency result.

## Investments

**Investments of around €4.2 billion planned for 2016**

The bulk of our spending in 2015 was on major facilities that started operations during the reporting period, such as parts of the TDI production complex in Ludwigshafen, Germany; production plants for acrylic acid and superabsorbsents in Camaçari, Brazil; and an MDI plant in Chongqing, China. We have planned capital expenditures totaling €19.5 billion for the period from 2016 to 2020 and will invest more than a quarter of this amount in emerging markets.

Projects currently being planned or underway include:

### Capital expenditures: Selected major projects

<table>
<thead>
<tr>
<th>Location</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Antwerp, Belgium</td>
<td>Modification for new superabsorbent technology platform</td>
</tr>
<tr>
<td>Beaumont, Texas</td>
<td>Expansion: dicamba and dimethenamid-P</td>
</tr>
<tr>
<td>Caojing, China</td>
<td>Construction: automotive coatings</td>
</tr>
<tr>
<td></td>
<td>Construction: chemical catalysts</td>
</tr>
<tr>
<td>Geismar, Louisiana</td>
<td>Expansion: butanediol</td>
</tr>
<tr>
<td>Kuantan, Malaysia</td>
<td>Construction: aroma chemicals</td>
</tr>
<tr>
<td></td>
<td>Construction: polysobutene</td>
</tr>
<tr>
<td></td>
<td>Construction: 2-ethylhexanoic acid</td>
</tr>
<tr>
<td>Rayong, Thailand</td>
<td>Construction: mobile emissions catalysts</td>
</tr>
<tr>
<td>Schwarheide, Germany</td>
<td>Capacity expansion: compounding plant for Ultramid® and Ultradur®</td>
</tr>
</tbody>
</table>

1 Excluding additions to property, plant and equipment from acquisitions, capitalized exploration, restoration obligations and IT investments
In the Oil & Gas segment, our currently planned investments of around €4.8 billion between 2016 and 2020 will focus mainly on the development of proven gas and oil deposits in Argentina, Norway and Russia. The actual amount of expenditure will depend on oil and gas price developments and be reduced as needed.

For 2016, we plan total investments of around €4.2 billion, particularly for the major projects in the countries listed above.

### Capital expenditures by segment, 2016–2020

<table>
<thead>
<tr>
<th>Segment</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chemicals</td>
<td>30%</td>
</tr>
<tr>
<td>Performance Products</td>
<td>16%</td>
</tr>
<tr>
<td>Functional Materials &amp; Solutions</td>
<td>12%</td>
</tr>
<tr>
<td>Agricultural Solutions</td>
<td>4%</td>
</tr>
<tr>
<td>Oil &amp; Gas</td>
<td>24%</td>
</tr>
<tr>
<td>Other (infrastructure, R&amp;D)</td>
<td>14%</td>
</tr>
</tbody>
</table>

### Capital expenditures by region, 2016–2020

<table>
<thead>
<tr>
<th>Region</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe</td>
<td>46%</td>
</tr>
<tr>
<td>North America</td>
<td>26%</td>
</tr>
<tr>
<td>Asia Pacific</td>
<td>18%</td>
</tr>
<tr>
<td>South America, Africa, Middle East</td>
<td>9%</td>
</tr>
<tr>
<td>Alternative sites currently being investigated</td>
<td>1%</td>
</tr>
</tbody>
</table>

### Dividend

We stand by our ambitious dividend policy and offer our shareholders an attractive dividend yield. We continue to aim to increase our dividend each year, or at least maintain it at the previous year’s level.

### Financing

Our financing policy is aimed at ensuring our solvency at all times, limiting the risks associated with financing and optimizing our cost of capital. We strive to maintain at least a solid “A” rating, which allows the BASF Group unrestricted access to money and capital markets.

From the scheduled repayment of bonds, we expect cash outflows in the equivalent amount of around €900 million in 2016. To refinance mature 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 the proposed dividend can be found from page 14 onward.

### Events after the reporting period

On February 17, 2016, we announced that a general agreement had been reached with AkzoNobel on the sale of the Coatings division’s industrial coatings business for €475 million. The transaction would include technologies, patents and trademarks, as well as the transfer of two production sites in England and South Africa. The planned transaction is subject to the required consultation with employee representatives and certain regulatory approvals. Our industrial coatings business generated sales of approximately €300 million in 2015. We intend to complete the transaction by the end of 2016.