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 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 potential 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

For 2017, we expect the global economy to continue to grow at around the same pace as the previous year. Important opportunities and risks for our earnings are associated with uncertainty regarding market growth, the development of key customer industries, and volatility in foreign currency exchange rates and margins. A considerable slowdown of the Chinese economy continues to pose significant risks. Such a development would negatively impact 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 and an increased tendency toward protectionism.

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.
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 Controlling; Strategic Planning & Controlling; Legal, Taxes, Insurance & Intellectual Property; and the Chief Compliance Officer. Effective January 1, 2017, the Finance corporate unit and the Legal, Taxes, Insurance and Intellectual Property corporate unit were both renamed functional units. Competence centers were relabeled either functional units or research units. The Strategic Planning & Controlling unit is now called Corporate Development. The aforementioned units continue to 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, research, functional 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 regional or 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 at least once 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.
- The BASF Group’s management is informed about operational opportunities and risks (observation period of up to

1 The names of some individual units were changed as of January 1, 2017. For more information, see the section “Organization and responsibilities.”
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, 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 Finance division. 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 processes 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 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 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 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

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 from pages 119 to 121.

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 and an increased tendency toward protectionism.

Should the macroeconomic environment develop more weakly than we predict, we expect a lower oil price. 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

We anticipate generally stable margins for the BASF Group in 2017. For some products and value chains, it is possible that margin pressure could be increased by, for example, new capacities or increasing raw material costs. This would have a negative effect on our EBIT.

The year's average oil price for Brent crude was around $44 per barrel in 2016, compared with $52 in the previous year. For 2017, we anticipate an average oil price of $55 per barrel. We therefore expect a moderate increase in price levels 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.

Competition

We continuously enhance our products and solutions in order to maintain competitive ability. We watch the market and the competition, and try to take targeted advantage of opportunities and counter emerging risks with fitting measures. Aside from innovation, a major component of competitiveness is a suitable cost structure in order to achieve good business performance on the market.

Regulation and political risks

Risks for us can arise from intensified geopolitical tensions, the destabilization of political systems or new trade sanctions. In addition, risks to the BASF Group can be posed by further regulations on the use or registration of agricultural and other chemicals.

The German federal government's agreement with the E.U. Commission on the treatment of existing self-generated energy in the new Renewable Energy Act (Erneuerbare-Energien-Gesetz, or EEG) has removed the previously reported risk of sharply increased charges resulting from the EEG surcharge.

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

Purchasing and supply chain

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 non-delivery. We continuously monitor the credit risk of important business partners.

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 unscheduled shutdowns 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.

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.

For more on emergency response, see page 100 or basf.com/emergency_response

Acquisitions, divestitures and cooperations

We are constantly watching our environment in order to identify possible 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.

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 on our compensation system, see page 44 onward
For more on risks from pension obligations, see page 117

Information technology risks

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 technology, 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 uses globally uniform 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.

Legal dispute 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 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 units. 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 functional unit 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

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 the BASF Group’s EBIT, assuming other conditions remain the same. On the production side, we counter foreign currency 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 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 well-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. 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 the balanced maturity profile of its 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 208 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. 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, the predicted cash flows decline, or investment projects are suspended. In the current business environment, we consider the risk of impairment of individual assets such as customer relationships, technologies and trademarks, 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.
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.

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 Pensionsträuhand 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

We assume that chemical production (excluding pharmaceuticals) will grow considerably faster than global gross domestic product over the next five years 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 capacities, 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, the expected growth rates 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. For more on the “We create chemistry” strategy, see page 22 onward.

Development of competitive and customer landscape

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

We counter this risk through active portfolio management. We exit markets where risks outweigh opportunities, and in which we see limited possibilities to stand out from our competitors in the long term.

In order to remain competitive, we continuously improve our operational excellence. Our strategic excellence program, DrivE, also contributes to this aim. Starting at the end of 2018, we expect this program to contribute around €1 billion in earnings each year compared with baseline 2015.

In order to achieve lasting profitable growth, tap into new market segments and customers, 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.

Innovation

The trend toward more sustainability in our customer industries continues. We want to use innovations to take advantage of the resulting opportunities. In the long term, we aim to continue increasing sales and earnings with new and improved products.

BASF’s enhanced innovation approach helps the company increase its power of innovation and ensure competitive ability through targeted enhancement and innovative application of specific key technologies. This is achieved by honing the focus of research on topics with long-term strategic business relevance, enhancing existing scientific processes and methods and introducing new ones, and optimizing our organizational structures. The central research areas Process Research & Chemical Engineering, Advanced Materials & Systems Research and Bioscience Research serve as global platforms headquartered in one of the regions particularly significant for us: 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. Stronger regional presence opens up new opportunities to participate in local innovation processes and gain access to local talent. 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.

We optimize the efficiency and effectiveness of our research activities through our global Know-How Verbund as well as through collaboration with partners and customers. Furthermore, we continuously review the chances of success and the underlying conditions of research projects; this
review includes all phases from idea generation to product launch. The trust of customers and consumers is essential for the successful introduction of new technologies. That is why we enter into dialog with stakeholders at an early stage of development.

For more on innovation, see page 32 onward

**Portfolio development through investments**

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; therefore, more than a quarter of our investment budget will be spent in emerging markets over the next five years. In North America, investments in new production facilities form the basis of future growth. For example, we are constructing an ammonia production plant in Freeport, Texas, with Yara International ASA (based in Oslo, Norway). In addition, we are continuing to evaluate an investment in a world-scale methane-to-propylene complex on the U.S. Gulf Coast and conduct regular assessments with a view to developments in raw material prices and the relevant market conditions.

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 from potential deviations in actual developments from our assumptions.

For more on our investment plans, see page 123 onward

**Acquisitions**

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

The evaluation of opportunities and risks plays a significant role during the assessment of 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 37 onward

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

BASF, too, is adjusting in the medium and long term to the rising challenge of gaining 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 40 onward

**Sustainability**

BASF uses sustainability management tools to identify upcoming opportunities and risks that arise in connection with the topics of 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, and take into account our experiences from constant stakeholder dialog. We have established global monitoring systems to check adherence to laws and our voluntary commitments in the areas of environment, society and governance. These also incorporate our suppliers.

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.

In order to identify, assess and direct climate-related risks and opportunities, our risk management process includes analyzing the material aspect “energy and climate.” For BASF as an energy-intensive company, opportunities and risks arise particularly from regulatory changes, such as in carbon prices through emissions trading systems, taxes or energy legislation.

For more on sustainability management, see page 29 onward

For more on energy and climate protection, see page 103 onward

For more on opportunities and risks from energy policies, see page 114
Economic environment in 2017

The global economy will presumably grow by 2.3% in 2017, about as fast as in 2016 (+2.3%). In light of significant political uncertainty, volatility is likely to remain high. We forecast a considerable slowdown in growth in the European Union. For the United States, we currently anticipate a slight upturn in growth. Growth in China is likely to continue its downward trend. We expect the recession in Brazil and Russia to end. We assume that global chemical production will grow by 3.4% in 2017, comparable with the rate of 2016. For 2017, we predict an average price of $55 per barrel for Brent blend crude oil and an exchange rate of $1.05 per euro.

Trends in the global economy in 2017

- Weaker growth likely in the European Union
- Further slowing of growth expected for China
- Slight upturn probable in the United States
- End of recession anticipated for Russia and Brazil

Economic growth in the European Union is expected to slow down considerably in 2017. In the United Kingdom, uncertainty as to the terms of exit from the European Union is likely to curb investment and private consumption. This weaker dynamic will have a dampening effect on the growth of Britain’s E.U. trading partners, including Germany, Italy, France and Spain. Growth will presumably remain at a stable higher level in the eastern E.U. countries. We expect the recession in Russia to end, supported by our forecast of a slight recovery in the oil price.

Following the administration change in the United States, economic prospects for the United States are especially difficult to predict. We assume that this uncertainty will be reflected in a greater reluctance to invest in the manufacturing and service sectors. Nevertheless, overall economic growth in 2017 will quicken somewhat, as investments in the oil and gas industry are unlikely to continue declining. While the tax cuts planned by the new U.S. administration could have positive effects on growth, the expected protectionist measures and the stronger U.S. dollar pose risks to the country’s economy.

In the emerging markets of Asia, we expect growth to continue weakening in 2017. Against the backdrop of economic restructuring in China, we anticipate a further cooldown in economic momentum. We predict growth at levels comparable to 2016 for the other countries in the region. While developments in China will probably exercise a dampening effect, raw material prices and demand for imports from South America and Russia should stabilize. The region’s economy is supported by a solidly growing IT and communications industry.

Japan’s gross domestic product is expected to maintain its merely minimal upward trend in 2017. Monetary and fiscal policy will continue to provide some growth impetus; however, investment momentum and private consumption will remain on the slow side in an environment of weak domestic demand. Moreover, we do not expect any significant impulses that would boost exports.

We anticipate an end to the economic downturn in South America. Leading indicators suggest that Brazil has bottomed out. Falling interest rates and declining inflation could increasingly support readiness to invest in the country; export demand is also likely to rise. We forecast economic recovery in Argentina. Decreasing inflation, a stable exchange rate and a better investment climate should provide impetus for growth.
Outlook for key customer industries

- Marginally higher growth expected in global industrial production for 2017

Global industrial production in 2017 is likely to grow marginally faster than in 2016, at 2.3%. This will be largely attributable to the end of the severe recession in South America, where industrial production should once again show slight growth. In the emerging markets of Asia, growth in industrial production will abate slightly, from 5.5% to 5.2%. In the advanced economies, it will probably remain weak, at under one percent.

We expect an economic slowdown in the transportation sector overall compared with 2016. After three years of solid growth, automotive production is likely to expand only slowly in western Europe, while other branches of the transportation industry could increase their growth rates. A turnaround can be expected in the Russian automotive market. The eastern European automotive market will begin growing again slightly as a result, even if at a low level. In North America, we expect production to stagnate overall. U.S. automotive production will probably shrink slightly; in Mexico, on the other hand, new production-line startups are expected to lead to growth. In South America, we anticipate slight increases in production once again for 2017. Growth in automotive production in China will weaken after the significant gains seen in 2016.

In the energy and raw materials sector, production will presumably grow again in 2017 after stagnating in 2016. However, in Europe and South America, we only anticipate a slight increase in production volumes. Higher raw material prices and the return of stronger demand are likely to provide somewhat faster growth in North America. Production will expand only moderately in the emerging markets of Asia; this will be partly offset by rising imports from Australia.

For the construction sector, we are assuming that the solid growth rates will continue overall. Construction volumes will grow only moderately in western Europe. A sharp increase in Germany and weak growth in France and Italy will contrast with a shrinking market in the United Kingdom. In the eastern E.U. countries, construction activity will recover somewhat after the strong declines of the previous year. However, we still see no increase in activity in Russia. Construction in North America is expected to grow at a moderate pace. We do not anticipate growth impetus in the infrastructure sector in the short term; financing conditions and the volume of a potential, state-funded infrastructure program remain unclear. In China, we continue to expect support measures for the construction industry; growth there will nevertheless abate. We still expect the other Asian emerging markets to show stable growth rates in the construction industry. In Japan, government spending programs should ensure additional investments in infrastructure. The construction market in South America is likely to recover somewhat after the declines of recent years. Given a background of continuing weak oil prices, only a slight recovery in construction activity is expected in the Middle East.

Consumer goods production will presumably grow slightly faster in 2017 than in the previous year. The increase will remain weak in western Europe; eastern Europe will see higher rates, albeit somewhat lower than in 2016. After a slight decline in the previous year, we once again expect modest growth in North America. In Asia, which accounts for over half of the world’s production of consumer goods, growth will probably remain stable at a high level. For South America, we predict consumer goods output will stagnate following last year’s considerable decline.

The electronics industry is likely to expand its production at a similarly strong rate as in 2016. We anticipate stable growth in Asia, the center of the global electronics industry, at a level comparable to that of the previous year. The increase will probably be somewhat higher year-on-year in North America.

In the health and nutrition sector, growth should once again match the levels of recent years. We expect the increase to be slightly higher overall in the European Union and in North America. The fast pace of growth in this sector in Asia will probably let up slightly in 2017. In this industry, too, we expect production to recover in South America.

We expect stable to slightly accelerating growth in agricultural production in 2017, given the low level of agricultural production growth in 2016. Record yields in some regions – of corn and soy in North America and wheat in eastern Europe, for example – contrasted with declining yields in parts of South America and Asia in particular, due to the negative effects of El Niño as well as weaker monsoon rains. Global demand for bioethanol in 2017 will remain dampened by lower prices in the energy sector. Against this backdrop, we expect prices for agricultural raw materials to remain under pressure in 2017.
Outlook for the chemical industry

- Global growth in chemical industry at level of previous year

Global chemical production (excluding pharmaceuticals) will probably grow by 3.4% in 2017, the same pace as 2016 (+3.4%). We anticipate a marginally higher expansion rate in the advanced economies (2016: +0.9%, 2017: +1.1%). Growth in the emerging markets will presumably weaken somewhat (2016: +5.4%, 2017: +5.1%). 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. There, the upward trend may continue to slacken but producers in China are nevertheless likely to contribute more than two percentage points to worldwide chemical industry growth. Yet macroeconomic risks in China remain high, therefore, our forecast for global chemical growth is marked by particular uncertainty.

Chemical production in the European Union is expected to barely grow faster than in 2016. In general, the increase in production will remain modest against the backdrop of a sluggish domestic market. We expect competitive pressure on export markets to remain intense, even though the naphtha-based European chemical industry benefits more from low oil prices than the gas-based production in the United States.

In the United States, we expect somewhat faster growth in chemical production, at just under 2%, as new production capacity, which will also be used for export, comes on stream. Overall chemical growth is likely to decelerate somewhat in the emerging markets of Asia, mainly due to the slowdown in China, which will also affect the other developing countries in the region.

In Japan, we presume a weak overall economic environment and minimal growth in chemical production.

In South America, the anticipated end of the recession in Argentina and Brazil will result in slight growth in chemical production in the region.

---

### Outlook for chemical production 2017 (excl. pharmaceuticals)

<table>
<thead>
<tr>
<th>Region</th>
<th>Real change compared with previous year</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>3.4%</td>
</tr>
<tr>
<td>European Union</td>
<td>0.5%</td>
</tr>
<tr>
<td>United States</td>
<td>1.8%</td>
</tr>
<tr>
<td>Emerging markets of Asia</td>
<td>5.8%</td>
</tr>
<tr>
<td>Japan</td>
<td>0.5%</td>
</tr>
<tr>
<td>South America</td>
<td>1.2%</td>
</tr>
</tbody>
</table>

### Trends in chemical production 2017–2019 (excl. pharmaceuticals)

<table>
<thead>
<tr>
<th>Region</th>
<th>Average annual real change</th>
</tr>
</thead>
<tbody>
<tr>
<td>World</td>
<td>3.6%</td>
</tr>
<tr>
<td>European Union</td>
<td>1.0%</td>
</tr>
<tr>
<td>United States</td>
<td>2.7%</td>
</tr>
<tr>
<td>Emerging markets of Asia</td>
<td>5.7%</td>
</tr>
<tr>
<td>Japan</td>
<td>0.5%</td>
</tr>
<tr>
<td>South America</td>
<td>1.9%</td>
</tr>
</tbody>
</table>
Outlook 2017

For 2017, we expect the global economy and chemical production to grow at around the same pace as 2016. We assume an average price of $55 for a barrel of Brent blend crude oil and an exchange rate of $1.05 per euro. In an environment that remains volatile, we aim to grow profitably and considerably raise the BASF Group’s sales. For income from operations (EBIT) before special items as well as for EBIT, we anticipate a slight increase compared with the previous year.\(^1\)

For more information on our expectations for the economic environment in 2017, see page 119 onward.

Sales and earnings forecast for the segments

Sales and earnings forecast for the BASF Group

- Considerable sales growth through increases in all segments
- Slightly higher EBIT before special items

We expect BASF Group sales to grow considerably in the 2017 business year. This will be supported by slightly higher sales in the Performance Products segment and by considerable increases in the other segments as well as in Other.

We want to slightly raise EBIT before special items compared with 2016. We anticipate considerably higher contributions from the Oil & Gas segment and from Other. In the Performance Products, Functional Materials & Solutions and Agricultural Solutions segments, we assume EBIT before special items will be slightly higher, while the contribution from the Chemicals segment will match the prior-year level.

BASF Group EBIT is also expected to grow slightly in 2017. A significantly higher contribution from the Oil & Gas segment and slight increases in the Chemicals, Performance Products and Agricultural Solutions segments are expected to more than offset the slight declines in the Functional Materials & Solutions segment and in Other. In 2016, EBIT of the Functional Materials & Solutions segment contained special income from divestitures, and EBIT of Other included special income from the sale of assets.

We are likely to once again earn a significant premium on our cost of capital in 2017; compared with the previous year, however, BASF Group EBIT after cost of capital will decrease considerably. The slight rise in EBIT – despite a lower level of special income from divestitures – will be contrasted by higher cost of capital, due for the most part to the acquisition of Chemetall at the end of 2016 as well as the startup of new plants. In the Functional Materials & Solutions segment, we are therefore assuming that EBIT after cost of capital will decline considerably. We aim to boost it slightly in the Chemicals segment and considerably in the other segments.

The significant risks and opportunities that could affect our forecast are described on pages 111 to 118.

Sales and earnings forecast for the segments

Sales in the Chemicals segment are likely to grow considerably in 2017. We anticipate higher sales prices as a consequence of rising raw material prices, as well as volumes growth from factors such as the startup of new plants. We assume that strong competitive pressure will continue, especially on the markets for butanediol, isocyanates and caprolactam. EBIT before special items is likely to match the level of 2016. We expect the earnings contribution from the increase in sales volumes to offset both margin pressure and higher fixed costs. Fixed costs will rise especially in the Intermediates division, mainly as a result of scheduled plant turnarounds and initial expenditures for the new acetylene plant in Ludwigshafen.

In the Performance Products segment, we expect the market environment to remain challenging, but nevertheless aim to slightly increase sales in 2017. This will be largely supported by volumes growth in all divisions, thanks in part to higher plant capacity utilization rates as well as the startup of new production capacities. We anticipate higher fixed costs in 2017, especially from new plant startups. This rise will be more than offset by strict cost discipline and measures to increase competitiveness in all divisions. As a result, we forecast slightly higher EBIT before special items compared with 2016.

We want to achieve a considerable sales increase in the Functional Materials & Solutions segment in 2017. The Chemetall business acquired from Albemarle will contribute to this, as will the sales volumes growth anticipated in all divisions. Our forecast is supported by the expectation of continuing good demand from the automotive and construction industries. The divestitures completed in 2016 in the Catalysts and Coatings divisions, along with a probable decline in precious metal prices, will slow sales growth. As a result of higher sales, EBIT before special items is likely to slightly exceed the level of 2016.

For the Agricultural Solutions segment, we anticipate stable market development for crop protection products in 2017. Our goal is to utilize growth potential on the market primarily through the launch of innovative products, growth in the emerging markets – especially Asia – and a strong customer focus. We are planning to increase volumes in 2017 and considerably boost sales levels. Because of ongoing margin pressure in a market environment that remains challenging, we assume a slight increase in EBIT before special items.

\(^1\) With reference to 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%).
Our planning for the 2017 business year in the Oil & Gas segment is based on an average price for Brent blend crude oil of $55 per barrel. Gas prices in northwestern Europe are likely to hover above the level of 2016. We anticipate a considerable rise in sales and EBIT before special items. Higher prices for oil and gas and a contribution from our share in the Yuzhno Russkoye natural gas field exceeding that of the previous year will substantially support this development. In 2016, the excess amounts received over previous years were compensated as contractually agreed with our partner, Gazprom.

Sales in Other are expected to considerably increase in 2017, primarily as a result of higher prices in raw material trading. We also anticipate a considerable rise in EBIT before special items as compared with 2016.

Our investments in 2016 focused on the Chemicals, Performance Products and Oil & Gas segments. For example, we started up further sections of the TDI production complex in Ludwigshafen, Germany; completed construction of the aroma ingredients complex in Kuantan, Malaysia; and invested in field development projects in Argentina, Norway and Russia.

For 2017, we are planning total capital expenditures of around €3.9 billion for the BASF Group. We have planned capital expenditures totaling €19.0 billion for the period from 2017 to 2021 and will invest more than a quarter of this amount in emerging markets. The average investment volume in the years ahead will therefore remain at the same level as in 2016. Projects currently being planned or underway include:

<table>
<thead>
<tr>
<th>Location</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>Caojing, China</td>
<td>Construction: automotive coatings plant</td>
</tr>
<tr>
<td>Geismar, Louisiana</td>
<td>Capacity expansion: MDI</td>
</tr>
<tr>
<td>Ludwigshafen, Germany</td>
<td>Replacement: acetylene plant</td>
</tr>
<tr>
<td></td>
<td>Construction: vitamin A production plant</td>
</tr>
</tbody>
</table>

In the Oil & Gas segment, our currently planned investments of around €4.4 billion between 2017 and 2021 will focus mainly on the development of proven gas and oil deposits in Argentina, Norway and Russia. The actual amount of expenditure is also dependent on oil and gas price developments and will be adjusted as necessary.
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.

Information on the proposed dividend can be found from page 12 onward

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 €1.4 billion in 2017. 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 our financing policies can be found on page 57

Events after the reporting period

Since the end of the 2016 business year, we have acquired the Henkel Group’s western European building material business for professional users and completed the purchase of Rolic AG, an Allschwil, Switzerland-based company primarily active in the display material sector.

For more information, see the Notes to the Consolidated Financial Statements on page 220