
Group Management Report

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Group Management Report

THE ZEISS GROUP

Business activity

ZEISS is an internationally leading technology enterprise operating in the optics and optoelectronics industries. The ZEISS Group emerged from a workshop for precision mechanics and optics established by company founder Carl Zeiss in Jena (Thuringia) in 1846. Today, ZEISS is headquartered in Oberkochen (Baden-Württemberg).

ZEISS plays an active part in advancing leading-edge technology and advances the world of optics and other related fields with its solutions. The ZEISS Group develops, produces and sells semiconductor manufacturing equipment, measuring technology, microscopes, medical technology and eyeglass lenses, as well as camera and cine lenses, binoculars and planetarium technology. ZEISS comprises 4 segments: Semiconductor Manufacturing Technology, Industrial Quality & Research, Medical Technology and Consumer Markets.

Semiconductor Manufacturing Technology

With a wide product portfolio and globally leading know-how, the Semiconductor Manufacturing Technology segment covers a variety of key processes in the production of microchips. ZEISS develops and manufactures products using semiconductor manufacturing technology, including lithography optics, photomask systems and process control solutions, key technologies for the manufacture of extremely fine circuit path structures on silicon wafers – the material from which the microchips are made. The technologies from ZEISS enable further miniaturization of semiconductor structures, making microchips smaller, more powerful, energy-efficient and cost-effective. The electronic equipment with which they are equipped foster global progress in a variety of disciplines, including technology, electronics, communications, entertainment, mobility, energy and artificial intelligence. With this segment, ZEISS is making a decisive contribution to shaping the age of microelectronics and our digital future. In the reporting year, the segment celebrated 50 years of semiconductor manufacturing technology at ZEISS.

Industrial Quality & Research

The products and solutions developed in the Industrial Quality & Research segment are focused on increasing productivity, quality assurance in production and visualizing the tiniest of structures in the area of science and research. The range of coordinate measuring machines, optical and multisensory systems, and software solutions is complemented by comprehensive service offerings and innovative technologies, such as 3D X-ray measurement in quality assurance. They ensure perfect results, for example, in the automotive industry, mechanical engineering and aircraft construction, and in the plastics industry and medical technology. In the area of science and research, the segment also covers the entire spectrum of microscopy with light, ion, electron and X-ray microscopes. The solutions and services are used in the life sciences and materials research, as well as for education and in clinical practice.

Medical Technology

The Medical Technology segment develops, manufactures, markets and sells diagnostic and treatment systems, as well as implants and consumables in the field of ophthalmology. In addition, ZEISS offers visualization systems for microsurgery – for example, neuro/ENT surgery and dentistry. ZEISS aspires to improve the diagnosis and treatment of diseases by constantly enhancing its innovative products and applications. As a solutions provider, the company plays an active part in the increasing digitalization and systems integration in the health sector and creates the conditions needed for efficient processes and effective patient data management at its customers' sites. The segment's activities are pooled primarily in the listed entity Carl Zeiss Meditec AG, in which Carl Zeiss AG holds a 59.1% stake.

Consumer Markets

The Consumer Markets segment stands for excellence in vision care, photography, cinematography and sports optics. ZEISS develops, produces and sells solutions for the entire eyeglass value chain. Alongside ZEISS precision eyeglass lenses, this includes devices for eye examinations and vision testing, digital consultation and measurement applications, as well as comprehensive services for eye care professionals. ZEISS is one of the world's largest manufacturers of eyeglass lenses and offers a combined competence in eye and vision care that is unique the world over. With its camera and cine lenses, binoculars, spotting scopes and hunting optics, ZEISS offers discerning customers high-end products and applications for their hobbies and professional needs.

Global presence

The ZEISS Group is represented in more than 40 countries and has some 60 sales and service locations, more than 30 manufacturing sites and about 25 research and development centers around the globe.

Group structure

Carl Zeiss AG is the strategic management holding company that manages the ZEISS Group. It develops the ZEISS Group's corporate business activities and portfolio and provides central management and service functions. The sole owner of the company is the Carl Zeiss Foundation (Carl-Zeiss-Stiftung).

Group strategy

The ZEISS mission statement is: "As the pioneer of science in optics, we continue to challenge the limits of our imagination. With our passion for excellence, we create value for our customers and inspire the world in new ways." This statement encapsulates the ZEISS Group's fundamental objectives: ZEISS aims to leverage its customer focus to consolidate and expand its position as a global technology leader.

ZEISS has a broad and balanced business portfolio focusing on attractive future-oriented markets of optics, precision mechanics and optoelectronics. The objective of portfolio management is the sustainable business success of the ZEISS Group and therefore requires a systematic strategy geared to continuously enhancing value added.

The ZEISS Agenda 2020 clearly defines the strategic direction for the development of the ZEISS Group. In addition, it pools the key elements of the portfolio strategy and the individual segments. The 4 cornerstones of the ZEISS Agenda 2020 – CUSTOMER, COMPETITIVE, DIGITAL and TEAM – summarize what is necessary to successfully implement the strategy. The goal is to focus even more sharply on customers, to pay more consistent attention to competitiveness and to fully benefit from the possibilities of digitalization and the potential of the global TEAM ZEISS.

To continue to systematically implement ZEISS's position as a portfolio company organized by market and customer segments, the Executive Board was extended in the reporting year and segment responsibility assigned to its members. The ZEISS Group will press ahead with this organizational and structural development with measures designed to strengthen the strategic business units operating on the market that will be adopted at the beginning of fiscal year 2018/19.

To achieve its objectives, ZEISS relies on the commitment and expertise of its employees, its innovative strength, its culture of innovation and its strong brand. Moreover, the ZEISS Group is constantly working on increasing its international business activities.

Corporate management

The ZEISS Group is managed using financial and non-financial key indicators. These are summarized in a balanced scorecard. For ZEISS, revenue growth and EBIT are the most important financial indicators. Other financial indicators are Economic Value Added (EVA®) and Free Cash Flow (FCF). Important non-financial indicators are customer and employee satisfaction, innovation excellence and process quality. In addition, there is a clear focus on sustainable further development of the leadership and corporate culture.

REPORT ON ECONOMIC POSITION

Macroeconomic and segment-specific environment

Macroeconomic environment

The global economy continued to grow in the reporting period. The market growth of the industrial nations was more dynamic than originally anticipated in fiscal year 2017/18, with significant growth impetus stemming from the US in particular. The dynamically developing economies in Asia recorded another above-average development. Growth in China remained constant at a high level, only tailing off marginally compared to the prior year. In Latin America, the Brazilian economy showed signs of slight recovery while the economy in Mexico continued its upward trajectory.

Segment-specific environment

Semiconductor Manufacturing Technology

Global digitalization has multiplied the areas of application for the semiconductor sector. This has led to global demand for semiconductor products surpassing even positive forecasts, with the boom in the memory chips business in particular driving the industry's revenue up to record levels in the reporting year. Smartphones, data centers and cloud computing all require more and more powerful memory chips. However, growth was also driven by the other semiconductor products, in particular those used in the automotive and industrial sectors. In order to meet the rising demand for semiconductors, chip manufacturers are continuing to invest heavily in equipment for their production. They are expanding their capacity for the production of memory and logic chips in particular (especially microprocessors, graphics processors and application processors).

Industrial Quality & Research

The Group maintained its encouraging global market position in the area of industrial quality assurance in fiscal year 2017/18, while global research spending was roughly unchanged year on year. The automotive and the associated supplier industry were key drivers, as was the ongoing strong trend toward automation and digitalization in production. While the market environment relevant for the segment in Germany continued to develop positively, the US market declined, partly for political reasons. By contrast, the industrial market environment and research expenditure in the academic sector developed positively in the Asia-Pacific (APAC) region.

Medical Technology

The market for medical equipment and accessories again saw stable growth. Growth drivers included medical advances as well as megatrends such as demographic development as a result of increasing life expectancy and population growth. Growing per capita income is increasing demand for basic medical care in the dynamically developing economies. Solutions that increase the efficiency of diagnosis and treatment, improve

the effectiveness of patient treatments and reduce the costs for the healthcare system are becoming more crucial in the face of rising health costs and patient numbers. In addition, the increasing regulatory requirements and their variance from one region to another are a growing challenge in the context of product development and licensing.

Consumer Markets

Global market growth in the vision care market remains stable. The main growth drivers are increased purchasing power in emerging economies, the global rise in demand for vision care from an aging population and developments such as the significant increase in short-sightedness (myopia), as well as benchmark-setting innovations for eye care professionals and consumers. However, the global market for eyeglass lenses continues to be characterized by fierce price pressure and ongoing consolidation activities among competitors. The market for cine lenses developed positively in fiscal year 2017/18, thanks in particular to the trend toward full-format cameras, while the market for camera lenses remained challenging and hotly contested. The specialty markets for hunting optics and nature observation also grew slightly.

Overall statement on the economic situation of the Group as of fiscal year-end

The ZEISS Group participated in the growth of the global economy. Despite strongly negative currency effects, a new revenue high of €5,817m (prior year: €5,348m) was achieved and a return on EBIT of over 13% reported in fiscal year 2017/18.

The development forecast in the prior year was thus exceeded.

Net assets

Total assets increased by €586m in the reporting period to €7,903m (prior year: €7,317m). With regard to assets, this resulted mainly from the increase in cash and cash equivalents as well as the change in inventories and trade receivables. The increase in equity based on the good consolidated profit was the main effect on the liabilities side.

Structure of the statement of financial position – assets in € m/as a % of total assets

		Current assets	Non-current assets
Total assets 30 SEP 18	7,903	4,619/58%	3,284/42%
Total assets 30 SEP 17	7,317	4,095/56%	3,222/44%

Structure of the statement of financial position – equity and liabilities in € m/as a % of total equity and liabilities

		Current liabilities	Non-current liabilities	Equity
Total equity and liabilities 30 SEP 18	7,903	2,418/30%	1,722/22%	3,763/48%
Total equity and liabilities 30 SEP 17	7,317	2,194/30%	1,694/23%	3,429/47%

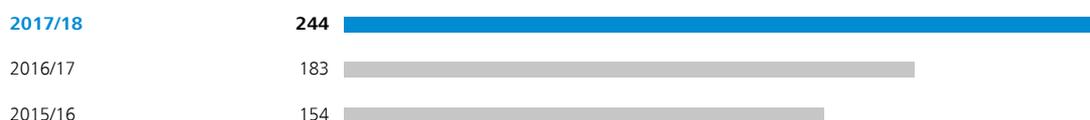
Intangible assets

Intangible assets of €881m (prior year: €777m) mainly contain goodwill of €665m (prior year: €589m). The increase is attributable to the first-time consolidation of Bosello High Technology S.r.l., Cassano Magnago (Italy), Carl Zeiss Meditec Digital Innovations, LLC, Temple (USA), and OPTEC GmbH, Düsseldorf (Germany). The impairment tests performed in the reporting period did not give rise to the need to recognize any impairment losses on goodwill.

Property, plant and equipment

In fiscal year 2017/18, ZEISS invested a total of €244m in property, plant and equipment (prior year: €183m), mainly in modernization measures relating to production plants and in furniture and fixtures. Depreciation in the reporting period amounted to €164m (prior year: €160m).

Capital expenditures on property, plant and equipment in € m



Other non-current assets

Other non-current assets amounted to €667m (prior year: €819m) and mainly pertained to securities and fixed-term deposits, loans as well as assets for securing flextime credits via a contractual trust arrangement (CTA).

Working capital

The change in inventories and current trade receivables is consistent with the increase in business volume compared to the prior year. The increase in trade receivables by 10% to €1,195m relates to the cut-off date. Inventories came to €1,391m as of the reporting date (prior year: €1,275m).

Other current assets amounted to €1,277m (prior year: €1,155m). The change mainly resulted from fixed-term deposits with a short-term investment horizon, which were higher than in the prior year.

Trade payables came to €403m as of the reporting date (prior year: €362m).

Current provisions came to €266m (prior year: €275m) and essentially comprise provisions for personnel-related and sales-related obligations, provisions for income taxes and provisions in connection with required structural adjustments.

The increase in other current non-financial liabilities by €121m to €1,515m (prior year: €1,394m) includes the change in sales-related and personnel-related obligations.

Significant increase in equity

Equity amounted to €3,763m as of the reporting date (prior year: €3,429m). The consolidated profit of €535m generated in the reporting period increased equity. Countereffects resulted from the remeasurement of defined benefit plans, which reduced equity by €41m, and from the dividends of €159m.

The equity ratio of 47.6% was slightly higher than the prior-year level (46.9%).

Pension obligations

The financing of the pension obligations in Germany is structured for the most part in the form of a contractual trust arrangement (CTA). Capital to cover pension obligations toward employees is transferred to a dedicated trust, thus clearly separating the funds for operations from those for the pension obligations. This has increased the transparency and international comparability of the Group's financial reporting. The legally independent trust invests the assets transferred to it on the basis of an appropriate long-term investment strategy. The pension obligations of the corresponding entities remain unchanged.

The CTA assets in Germany, which are separated from operating funds, increased in the reporting period to €1,309m (prior year: €1,189m). This increase mainly results from transfers to the CTA of €116m. Benefit obligations in Germany increased on account of the interest rate under IFRS, which decreased to 1.90% (prior year: 2.00%). For reasons relating to the cut-off date, this resulted in a funded status of the pension obligations of 80% (prior year: 82%).

The Group also has pension obligations toward employees of foreign subsidiaries.

In accordance with IAS 19, the pension obligations reported in the statement of financial position match the actual obligations and therefore correspond to the present value of benefit obligations after deducting the fair value of plan assets as of the reporting date. Provisions for pensions are reported at an amount of €1,144m (prior year: €1,185m) in the consolidated statement of financial position. This is equivalent to 14% of total assets (prior year: 16%).

Financial liabilities

Financial liabilities amounted to €451m (prior year: €343m). This essentially comprises promissory notes, obligations to non-controlling interests, a loan arranged with Kreditanstalt für Wiederaufbau, and issued participating capital.

Profit participation

To enable employees to share in ZEISS's successful performance, employees in Germany received a bonus of up to €2,400 for fiscal year 2017/18, which was paid out in October 2018. Employees at the majority of entities outside Germany also participated in the profit for fiscal year 2017/18 on the basis of the respective country-specific regulations.

Financial position

Sound liquidity base to implement long-term growth strategy

The financial position was mainly shaped by purchases of property, plant and equipment and the good consolidated profit in the reporting year. Furthermore, there were allocations to plan assets in Germany and abroad.

The cash outflows from investing activities were covered in full by the cash inflows from operating activities.

Cash flows from operating activities were primarily determined by the profit for the year and improved by 29% to €576m in the reporting year (prior year: €445m). This is largely attributable to the smaller increase in inventories and trade receivables compared to the prior year. In addition, there were allocations to plan assets in Germany and abroad of €128m.

Cash flows from investing activities came to minus €334m in the reporting period (prior year: minus €642m). Capital expenditures on intangible assets and property, plant and equipment increased by 20% from €231m to €277m in fiscal year 2017/18. Payments for the acquisition of shares in companies came to €106m.

Cash flows from financing activities amounted to minus €89m (prior year: €258m) in fiscal year 2017/18. Dividends of €90m were paid in the reporting year.

Cash and cash equivalents¹ came to €2,327m as of the reporting date (prior year: €2,201m). These contrast with loans payable of €207m (prior year: €215m), which resulted in net liquidity² of €2,120m (prior year: €1,986m).

Net liquidity in € m

30 SEP 18	2,120	
30 SEP 17	1,986	
30 SEP 16	568	

The financial position offers a good base on which to realize the long-term growth strategy.

In addition, the ZEISS Group has access to a revolving credit facility with a total volume of €500m that was concluded between Carl Zeiss AG and a syndicate of banks in fiscal year 2013/14 to finance its business operations. It has a bullet maturity on 16 July 2021 and serves as a strategic liquidity reserve for the ZEISS Group. In the reporting year, an amount of €22.4m was drawn on the facility in order to ensure selective financing in Brazil.

Goals and principles of financial management

ZEISS has a global financial management system that incorporates all subsidiaries and is coordinated centrally at Group level. The primary objective is to secure and effectively manage the liquidity of the ZEISS Group. In addition, ZEISS strives to continuously improve its financial strength and minimize financial risks. Investments are generally made in securities from issuers with good credit ratings. ZEISS is mainly funded through the operations of its segments, with which the financial activities and strategic orientation are aligned. The ZEISS Group has sufficient cash and cash equivalents and lines of credit to finance its operational and strategic objectives.

Results of operations

The income statement has been prepared using the cost of sales method that is widely used internationally.

The results of operations are characterized by a significant increase in revenue compared to the prior year and an EBIT margin of over 13%. There were strongly negative currency effects on revenue and profit stemming from the development of the US dollar in particular. Adjusted for these effects, revenue developed positively in all segments and regions.

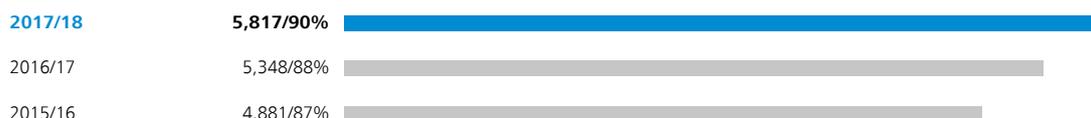
¹ Cash and cash equivalents plus securities and fixed-term deposits

² Cash and cash equivalents less loans payable

Revenue growth in a challenging market environment

In the reporting period, the ZEISS Group's revenue increased by 9% from €5,348m in the prior year to €5,817m, with the share of international revenue of 90% remaining unchanged at the very high level seen in prior years. The revenue development forecast in the prior year was exceeded.

Revenue in € m/international share as a %



The ZEISS Group's incoming orders increased by 7% (adjusted for currency effects: 11%) in the reporting period to €6,046m (prior year: €5,625m). Incoming orders in the instrument segments increased by a total of 4% (adjusted for currency effects: 8%). The Semiconductor Manufacturing Technology segment recorded an increase in incoming orders of 19% (adjusted for currency effects: 19%) compared to the prior year.

Consolidated revenue by segment

Revenue by segment	2017/18	2016/17	Change compared to prior year as a %	
	€ m	€ m		Adjusted for currency effects
Semiconductor Manufacturing Technology	1,531	1,212	26	27
Industrial Quality & Research	1,549	1,538	1	4
Medical Technology	1,546	1,427	8	14
Consumer Markets	1,106	1,108	0	4
Other	85	63	35	35
ZEISS Group	5,817	5,348	9	12

Semiconductor Manufacturing Technology

The Semiconductor Manufacturing Technology segment generated revenue of €1,531m. That is equivalent to an increase of 26% (adjusted for currency effects: 27%) compared to the prior year (€1,212m).

In the reporting year, ZEISS grew significantly compared to the prior year, especially in business with its strategic partner ASML. Thanks to the increasing need for memory chips, ongoing high demand for Deep Ultra Violet (DUV) lithography optics contributed significantly to the level of revenue achieved. Continuously rising orders for Extreme Ultra Violet (EUV) lithography systems, which are higher than initially forecast, demonstrate the series maturity already achieved by this technology. EUV lithography can be used to create even finer chip structures than DUV lithography systems and represents a significant technological advance in the history of chip manufacturing. Several manufacturers are currently starting series production of chips using the latest-generation EUV system. The segment is expanding its capacities in order to meet the demand for DUV and EUV lithography optics.

A major focus of the business activities of the segment and its partner ASML is the extremely challenging development and, with the expansion of the semiconductor plant in Oberkochen, the ramp-up of the next generation of EUV lithography. This future-oriented technology should enable the semiconductor industry to produce even more powerful microchips at a lower cost over the next decade.

Demand in the segment's other businesses with components and modules for lithography lasers and inspection optics was encouragingly stable on a high level. Sales of photomask systems also made a significant contribution to revenue growth in the reporting year. These solutions are used in the metrology, repair and tuning of photomasks. The segment's process control solutions for applications in the manufacture of semiconductors opened up a new market and made a positive contribution to revenue growth with its first product sales.

As of 30 September 2018, the segment had 3,438 employees worldwide (prior year: 2,879).

Industrial Quality & Research

In fiscal year 2017/18, the segment increased its revenue by 1% (adjusted for currency effects: 4%) from €1,538m in the prior year to €1,549m.

Demand for products in the Industrial Quality & Research segment developed positively during the reporting period. Revenue was up in the area of industrial quality assurance, especially in China, combined with a positive development of market share. Demand for services again grew in all regions and business areas. Adjusted for currency effects, business with microscopy systems for research and science was on a par with the prior year in the reporting year. The segment continues to focus on implementing a multi-channel sales strategy and expanding the software solutions portfolio in response to customer requirements in the Smart Production environment.

As of 30 September 2018, the segment had 6,773 employees worldwide (prior year: 6,303).

Medical Technology

The Medical Technology segment closed the fiscal year with a revenue increase of 8% (adjusted for currency effects: 14%). Revenue rose to €1,546m (prior year: €1,427m).

Contributions to the positive revenue development stemmed from both strategic business units and all regions, with the highest contributions from the Americas and APAC regions. Growth was seen in the Europe, Middle East and Africa (EMEA) region on the back of a stable development in Germany and ongoing solid growth in the other European core markets. Revenue growth in the Americas region was also encouraging and was attributable to the continued positive development on the US market. The APAC region again achieved positive revenue growth. China and South Korea were once more the main contributors, with products for ophthalmic surgery contributing in particular to the positive development of the business.

As of 30 September 2018, the segment had 4,889 employees worldwide (prior year: 4,535). Due to different bases of consolidation, the figures for the Medical Technology segment deviate from those published for Carl Zeiss Meditec AG.

Consumer Markets

At €1,106m, the Consumer Markets segment reported revenue at the prior-year level (€1,108m). Adjusted for currency effects, there was an increase of 4%.

In all regions, growth was achieved in particular with ZEISS precision eyeglass lenses and product innovations that are developed specifically to facilitate good eye sight in the digital world and that pick up on megatrends such as healthcare. The EMEA region reported a significant increase in revenue. Business also developed positively in the rapidly developing economies, in particular in Asia, as well as in the large markets in Central Europe. The USA, as the largest market for vision care, continues to be a challenge, mainly as a result of

intense competition among independent eye care professionals and increasing market entry barriers. The business in the strategic Consumer Products business unit was characterized by fierce competition in all areas and high price pressure in some. Against this backdrop, the business unit's transactions, processes and organizational structures will be simplified and aligned even more closely to the needs of customers and their expectations. In this context, necessary reorganization measures will also be carried out to optimize the cost structure.

As of 30 September 2018, the segment had 10,544 employees worldwide (prior year: 9,771).

Consolidated revenue by region

Revenue by region and cooperation partners	2017/18	2016/17	Change compared to prior year as a %	
	€ m	€ m		Adjusted for currency effects
EMEA	1,718	1,637	5	6
» thereof Germany	596	608	-2	-2
Americas	1,263	1,316	-4	4
APAC	1,407	1,270	11	16
Cooperation partners	1,429	1,125	27	27
ZEISS Group	5,817	5,348	9	12

In the economic region of EMEA, ZEISS reported an increase in revenue in the reporting period of 5% (adjusted for currency effects: 6%) to €1,718m (prior year: €1,637m), with revenue in Germany decreasing slightly (down 2%).

Revenue in the Americas region came to €1,263m, which is 4% lower (adjusted for currency effects: 4% higher) than in the prior year (€1,316m). The development of the US dollar had a strongly negative effect in fiscal year 2017/18.

Revenue in the APAC region increased by 11% compared to the prior year (adjusted for currency effects: 16%) to €1,407m (prior year: €1,270m). China continued its growth trajectory in the reporting period.

Direct business with supra-regional cooperation partners increased by 27% to €1,429m in fiscal year 2017/18 (prior year: €1,125m). The main contributory factor was the positive investment behavior in that period in the semiconductor sector.

Functional costs

Cost of sales increased by €253m in comparison to the prior year and came to €2,860m (prior year: €2,607m). Gross profit improved by €216m from €2,741m to €2,957m in the reporting year. As in the prior year, the gross margin was 51%.

Sales and marketing expenses in fiscal year 2017/18 amounted to €1,213m (prior year: €1,109m). The change mainly relates to the instrument business and is attributable to the ZEISS Group's growth strategy. General administrative expenses were €325m as in the prior year and were steady despite the higher business volume.

Research and development expenses recognized in the consolidated income statement came to €642m in the reporting year (prior year: €552m).

	2017/18	2016/17
	€ m	€ m
Research and development expenses according to consolidated income statement	642	552
Government and third-party grants	110	64
Capitalized development costs (IAS 38)	14	20
Research and development expenses before grants and IAS 38	766	636

Research and development expenses before grants and capitalized development costs (IAS 38) totaled €766m (prior year: €636m). Representing 13% of revenue and above the prior-year level (prior year: 12%), this figure testifies to the ZEISS Group's continued strong focus on innovation.

Development of earnings

Earnings before interest, taxes, depreciation and amortization (EBITDA) amounted to €1,014m in the reporting year (prior year: €985m).

Earnings before interest and taxes (EBIT) of €772m (prior year: €770m) with an EBIT margin of 13% (prior year: 14%) were generated in the reporting period. The EBIT margin projected in the prior year was exceeded.

	2017/18	2016/17	2015/16
	€ m	€ m	€ m
EBITDA	1,014	985	819
» EBITDA margin as a %	17	18	17
EBIT	772	770	615
» EBIT margin as a %	13	14	13

The financial result deteriorated by €40m compared to the prior year to minus €53m (prior year: minus €13m). The interest result amounted to minus €25m in the reporting period (prior year: minus €31m). The other financial result deteriorated by €47m to minus €28m (prior year: €19m). This is essentially attributable to measurement effects in connection with foreign currency hedges and the development of the exchange rates important to ZEISS in the reporting year.

The tax expense for fiscal year 2017/18 totaled €184m (prior year: €196m), which resulted in a group tax rate of 26% (prior year: 26%). The tax rate is mainly the result of the deferred tax assets recognized through profit or loss on statement of financial position items and on unused tax losses on account of improved business developments in the reporting year, reducing the tax expense accordingly.

ZEISS thus achieved a consolidated profit of €535m (prior year: €561m).

Consolidated profit/loss in € m

2017/18	535	<div style="width: 53.5%;"></div>
2016/17	561	<div style="width: 56.1%;"></div>
2015/16	404	<div style="width: 40.4%;"></div>

Economic value added generated

ZEISS measures the value added generated using the Economic Value Added (EVA®) indicator. This is the internal measure of the company's success. In fiscal year 2017/18, EVA® amounted to €413m (prior year: €412m). ZEISS therefore once again achieved considerable value added and continued the positive development of prior years. EVA® is calculated as the operating profit after taxes less cost of capital. The internal interest rate used to determine weighted average of cost of capital ranges between 6.5% and 10%, depending on the business involved.

NON-FINANCIAL KEY PERFORMANCE INDICATORS

Responsibility

Responsibility has a long tradition at ZEISS. As a company operating under the umbrella of the Carl Zeiss Foundation (Carl-Zeiss-Stiftung), ZEISS has been implementing the stipulations anchored in the Foundation Statute for over 125 years and constantly develops them further in the present context.

ZEISS informs stakeholders of its progress in the area of sustainability in a report based on the reporting standard of the Global Reporting Initiative (GRI) and on the sustainability pages at www.zeiss.com/corporate/int/about-zeiss/responsibility. Starting 31 January 2019, a separate non-financial report as defined by Secs. 315b, 315c in conjunction with Secs. 289c to 289e German Commercial Code (HGB) will also be available for the ZEISS Group.

Employees

Highly qualified, dedicated and motivated employees are the foundation for the long-term success of the ZEISS Group. The Group endeavors to conserve this foundation going forward. The total headcount of the ZEISS Group increased as of 30 September 2018 by 2,364 worldwide to 29,309 (prior year: 26,945). The largest increase in the number of employees was seen in Germany, where it rose by 728 to 12,067 (prior year: 11,339).

Diversity is a prerequisite for innovation, which is why it is actively supported and strengthened by ZEISS. Around 59% (prior year: 58%) of the ZEISS workforce – equivalent to 17,242 employees (prior year: 15,606) – work outside Germany. ZEISS is thus well positioned internationally.

The ZEISS Group's research and development departments have 3,248 employees (prior year: 2,872 employees) working on new solutions and technologies for the optics and optoelectronics industries and digital business models. As in the prior year, this is equivalent to 11% of the workforce.

Education and training is a high priority at ZEISS. As of the reporting date, the ZEISS Group had 395 apprentices and trainees as well as students of cooperative state universities offering dual degree programs (prior year: 362). The further training of employees and leadership development are further areas of focus for ZEISS. Employees can select from a large number of courses in the internal qualification program that is also available in digital form as the "Group Learning Program". In addition, ZEISS supports off-the-job training and personnel development measures.

ZEISS promotes occupational health and safety through comprehensive measures. In addition to the advice and support from occupational health and safety professionals and company doctors, corporate healthcare management at ZEISS contributes significantly to creating a modern and sustainable working environment. The focus is on the health, motivation and performance of employees. The central fields of activity are workplace design, healthcare competence development among employees and accident prevention.

Societal and social engagement

Millions of people around the world are threatened by preventable blindness or cannot access medical care. ZEISS sets new standards in the healthcare sector with solutions in Vision Care and Medical Technology and thus promotes medical progress. The aim is to contribute to an improved quality of life for patients in all areas in which ZEISS is active. ZEISS has been cooperating for years with non-profit organizations and given donations in money and in kind to ensure that medical care is available to all people in developing and emerging countries and that their medical professionals receive training.

In addition, ZEISS assumes responsibility and an active role in society. The ZEISS Group supports educational measures and scientific projects and institutions, as well as selected social and cultural initiatives and facilities at its locations. Professional associations involved in nature conservation activities and educational programs for children and adults are also supported.

In addition, dividends distributed to the Carl Zeiss Foundation (Carl-Zeiss-Stiftung) are used within the framework of its aims to promote, in particular scientific, engineering and mathematical studies in research and teaching.

Environment

ZEISS attaches great importance to a sustainable and economical use of resources as well as protecting the environment and climate. Sustainability is a key consideration – from the development and manufacture of its products, through to packaging, shipment and disposal. To this end, the ZEISS Group has defined corresponding requirements for its entities and suppliers. Furthermore, for the first time in 2018, ZEISS set clear targets for reducing energy consumption, carbon emissions, water consumption and waste. The sustainability report will detail progress in these areas.

In fiscal year 2017/18, ZEISS took part in CDP (formally Carbon Disclosure Project) for the first time and disclosed its answers in the questionnaire on climate change. Furthermore, all the major ZEISS manufacturing sites worldwide work in accordance with the international environmental management standard ISO 14001.

ZEISS launched its initiatives for the efficient handling of energy several years ago. The ZEISS Group sites in the EU have been certified to the energy management standard ISO 50001.

Products and value chain

For over 170 years, ZEISS has been synonymous with innovation. Its specific ownership structure ensures the scope required to enable investments in new developments, products and solutions in the long term. These are the basis for the sustained business success of ZEISS. ZEISS cooperates with global networks of renowned universities, research institutes, customers and experts in developing new technologies and solutions.

Optical technologies are key technologies of the future. ZEISS therefore invests in innovations and secures its innovative advantage by means of patents. As of the reporting date, ZEISS held about 8,600 patents worldwide (prior year: 8,400) and applied for new patents for approx. 450 inventions (prior year: approx. 500).

ZEISS aspires to rigorously implement all product safety laws relating to product use and disposal.

Suppliers and business partners around the world make an important contribution to the ZEISS products and services and thus also have an important influence on the sustainability performance of ZEISS. The company demands that its new and principal suppliers recognize the Code of Conduct of the Responsible Business Alliance (RBA) and implement ongoing measures to meet these requirements. The internationally recognized Code of Conduct is based on the UN guiding principles for business and human rights and was derived from international labor and environmental standards. ZEISS uses a risk-based approach to monitor suppliers and implement sustainability standards.

Integrity and compliance at ZEISS

The company's pledge to act with integrity is based on the historically shaped values of the foundation company ZEISS. Compliance with the law, fair competition and fairness toward business partners and employees are indispensable elements of a successful business. This requires an open and respectful corporate culture, which together with an effective compliance management system ensures that errors are identified, exposed and rectified at ZEISS.

It is vital to the reputation of the company that business partners, customers, public authorities, the general public and competitors all have confidence in the responsible, law-abiding and ethical conduct of all ZEISS employees. Therefore, ZEISS approved a Code of Conduct in 2007 that is valid throughout the world. It specifies and explains the general rules of behavior for various areas of our business activities. The Code of Conduct was updated and extended in fiscal year 2016/17. It details topics such as data protection, product safety, environmental protection and rules against restriction of competition and to combat corruption, and acts as a binding guideline for the business conduct of all employees and executives of the ZEISS Group. There are additional corporate policies for all the topics addressed in the Code of Conduct. With the ZEISS Compliance Management System, the ZEISS Group has also implemented framework conditions to ensure compliance with the law, regulatory requirements as well as internal corporate guidelines.

ZEISS recognizes the relevance of data and data protection and takes the protection of personal data very seriously. A globally consistent structure is therefore in place to protect data effectively.

RISK AND OPPORTUNITY REPORT

Groups with global operations face a large number of entrepreneurial risks and opportunities that can have a sustained impact on planned business performance. The assessment of opportunities and risks and the conscientious handling of entrepreneurial uncertainty are an important part of corporate governance and sustainable operating policies at ZEISS.

Risk management system

The central risk management system at ZEISS stipulates uniform rules and processes to detect, assess and manage risks at an early stage. The key objective is to exploit business opportunities and manage the associated risks.

Risk management coordinators apply the central policies and procedures. The management of the segments and strategic business units detects, manages and reports on operating and strategic risks. Overall responsibility lies with the Group's Executive Board, which regularly assesses possible scenarios, risks and opportunities and their management at group level. While the Executive Board examines the appropriateness of the risk management system, the Supervisory Board's Audit Committee monitors the effectiveness of the risk management system.

Internal control system

The internal control system (ICS) of ZEISS is based on the COSO Enterprise Risk Management Model (COSO ERM model). It integrates organizational, process-related and technical safeguards to ensure proper operating activities and correct reporting. This enterprise risk management system of the ZEISS Group covers strategic and operational risks, i.e. it does not merely monitor financial risks. For central processes, there are defined key risks and defined control mechanisms, which are evaluated with regard to their effectiveness.

The Group's Executive Board ensures that an adequate and effective internal control system is in place and that it is continuously enhanced. The Supervisory Board's Audit Committee monitors the effectiveness of the internal audit function, risk management and the internal control system as well as the financial reporting process.

Strategic and operational risks

ZEISS systematically analyzes and evaluates risks. Special emphasis is placed on potential economic effects and probability of occurrence. Risks are thus quantified and classified, and the risk-bearing capacity is identified. Due to the broad portfolio and the ZEISS Group's global presence, the strategic and operational risks are highly diversified.

General risks and opportunities

ZEISS regularly checks for risks and opportunities that can arise from changes in markets and within the supplier and customer environment, including consolidation within the industry, new technologies and competitors, and lower entry barriers for alternative vendors. Risks and opportunities arising from general demands made of companies by society and opportunities due to megatrends, such as digitalization and demographic change are also assessed at regular intervals. In addition, ZEISS analyzes economic, legal and political developments or economic sanctions in the economic regions relevant for the ZEISS Group and evaluates possible scenarios. Its international orientation, sustainable operating policies and balanced portfolio help spread the risk. However, the introduction of trade barriers, customs duties and increasing economic uncertainties could make conditions for ZEISS more difficult.

Innovation risks and opportunities

The success and reputation of ZEISS are heavily dependent on the development of innovative products and solutions. New trends and changing customer requirements can give rise to abrupt technology shifts and make new business models necessary. Current findings from science and research accelerate this development. In order to take advantage of these opportunities at an early stage and to minimize the probability of occurrence and the economic impact of the risk, ZEISS cooperates with customers and research institutes, engages in development partnerships including participations and makes targeted technology acquisitions. ZEISS seeks and engages in the targeted promotion of opportunities to extend the existing portfolio with market-shaping innovations. The ZEISS Digital Innovations Partners unit supports the segments in exploiting the opportunities offered by digitalization for customers and partners.

Personnel risks and opportunities

Demographic change and the evolving requirements of digitalization, as well as the differing training and qualifications standards around the globe, are creating new challenges when it comes to filling job vacancies. Increasing demands on potential employers are becoming noticeable. These give rise to moderate economic risks. ZEISS counters these with a global recruitment strategy and a consistent recruitment process, which leads to a low probability of occurrence. The ZEISS Group offers a broad spectrum of opportunities for development to attract professionals and managers and to retain them in the long term. In addition, a variety of location-based initiatives and social benefits are offered, including health promotion programs and models for reconciling work and family life.

Risks and opportunities in procurement and production

ZEISS ensures compliance with national and international standards, laws and regulations by means of an integrated management system that addresses the issues of quality, environmental protection, occupational health and safety, and energy management. The regulatory requirements for commodities and materials, the growing uncertainty in international trade, the growing complexity of purchased parts and the limited number of suppliers (single source) for some technologies give rise to higher costs and a moderate procurement risk. In addition, rising energy prices and capacity bottlenecks in the supplier chain are also driving up costs. To mitigate this risk, ZEISS continuously adapts its strategic supplier pool as part of product group management. ZEISS conducts systematic audits for these suppliers that also include social standards and environmental aspects. RBA compliance is also regularly monitored in the supply chain. ZEISS is continuously working to stabilize supply chains, reduce the dependence on individual suppliers and review partners' business practices in order to minimize the associated economic repercussions and impact on the company's reputation. ZEISS systematically leverages opportunities that arise from bundling procurement activities.

Risks and opportunities of information technology

ZEISS constantly examines and utilizes the opportunities of digitalization in order to offer customers additional and enhanced services. At the same time, dependence on the information technology (IT) infrastructure is constantly increasing. The ZEISS Group therefore permanently optimizes its existing IT systems and structures to ensure greater protection, security and availability. Some ZEISS IT systems are operated by external partners. For these service providers, high technical and legal standards regarding the hardware and software deployed, process monitoring and data security have been defined and contractually agreed. ZEISS continuously monitors the implementation of and compliance with these standards. The probability of IT risks occurring is estimated to be low. However, the economic impact, for example from cyber attacks, can be considerable.

Risks and opportunities from acquisitions and investments

Acquisitions or investments offer ZEISS the opportunity to better meet customers' needs. Assessments are made as to how to enlarge the competencies and technology portfolio or increase access to the regional markets. They also help to open up markets faster and accelerate processes. ZEISS systematically checks the associated risks and opportunities. Due diligence reviews aimed at assessing the business development that can be expected are a key element prior to closing transactions. The economic risks and probability of their occurrence are therefore low.

Goodwill totaling €665m from acquisitions is shown in the consolidated statement of financial position. This goodwill is subject to regular impairment tests. It cannot be ruled out that impairment losses on goodwill may need to be recognized on account of changes in economic conditions, business models or technologies.

Legal risks, patents and intellectual property

ZEISS safeguards its technologies and products through a comprehensive intellectual property rights strategy. If patent and brand rights are infringed by third parties, ZEISS takes legal steps in order to counter the associated high economic risk. The probability of such cases occurring is low.

When developing new products and technologies, ZEISS systematically checks whether the rights of a third party could be affected, develops non-protected solutions if necessary, and acquires the requisite licenses and rights, or seeks other solutions by legal contract. Due to the complexity of possible industrial rights and the increased activity of institutional patent assertion entities, there is a moderate risk of litigation with a moderate economic risk. Appropriate provision is made in the statement of financial position for any claims arising from unclear patent situations.

There is no pending litigation that poses any risk to the continued existence of ZEISS at present. In the prior year, Nikon initiated legal proceedings against ZEISS for alleged patent infringements. ZEISS categorically rejects the allegations and has itself filed patent infringement suits against Nikon.

Financial risks and opportunities

The liquidity risk of the ZEISS Group represents the risk that Carl Zeiss AG or subsidiaries may not be able to meet their financial obligations (for example, to repay financial liabilities or make interest payments). ZEISS has sufficient liquidity reserves in the form of cash and lines of credit. The investment strategy is conservative: the focus here is on security and short-term availability. In addition, ZEISS ensures that the investments are broadly diversified.

Credit risk stems from an adverse development in the economic conditions of the company's borrowers or counterparties. On the one hand, this gives rise to the risk of default, in full or in part, on contractually agreed payments or performance and, on the other, potentially a need to recognize credit-risk-related impairment losses on financial instruments. Risks of default are limited by choosing counterparties with excellent credit ratings given by external rating agencies. Concentration risks are limited and managed by conducting transactions with several different banks.

On account of its global orientation, the ZEISS Group is exposed to financial market price risks in its operations and the financial results and cash flows reported. These include currency and interest rate risks. The associated opportunities and risks of the ZEISS Group are managed centrally. ZEISS uses defined risk strategies to minimize

risks resulting from changes in exchange rates, interest rates or the value of assets. The ZEISS Group exclusively uses derivative financial instruments to hedge interest rates and currency risks. For this purpose, it enters into standard currency options and forward exchange contracts. These cover the underlying goods and services transactions of Group entities and non-derivative financial transactions (hedged transactions).

Overall, the ZEISS Group's financial risks are classified as low with a low probability of occurrence.

In the context of pension obligations, risks could also arise from the further increasing life expectancy of the beneficiaries, from general interest rate developments and from the obligation to regularly adjust the amount of the pensions paid. The existing pension agreements could give rise to risks with regard to equity, thereby restricting scope for strategic action. In light of this, the pension rules have been revised.

ZEISS has transferred the funds to cover pension obligations toward active employees in Germany to a contractual trust arrangement (CTA). The investment strategy is based on long-term commitments.

In principle, further financial risks and risks relating to the statement of financial position can arise from changes to accounting standards.

Market risks and opportunities

The broad and balanced ZEISS business portfolio helps spread risk. The search for opportunities to expand the portfolio horizontally or vertically results in further market opportunities and a broader risk diversification. The economic risk arising from the differing development of the segments is classified as moderate with a moderate probability of occurrence. In order to further reduce both the probability of occurrence and the economic risk, ZEISS has launched programs designed to increase competitiveness in certain areas.

The volatility and consolidation of the semiconductor sector entails risks and opportunities for the Semiconductor Manufacturing Technology segment, which ZEISS must adapt to in a flexible manner. The segment is well positioned for changing market and technology requirements thanks to an optimized organizational structure. In particular, the series maturity of EUV lithography achieved in the reporting year offers considerable growth opportunities while also presenting high inherent technological risks for the segment. ZEISS therefore collaborates closely with its strategic partner ASML and other development partners in order to jointly steer the next generation of this future-oriented technology to success as well.

The Industrial Quality & Research segment is exposed to risks arising from the dependence on the capital goods industry and particularly the automotive and the associated supplier industries, and their technology roadmap (electromobility) and willingness to invest. This is also true of the international research expenditure in the academic sector. These risks are reduced by continuously developing new application areas, through an innovative product portfolio and by stringently expanding the segment's business with customer services. The segment is therefore improving its product portfolio to tap new market and customer potential, also by integrating digital solutions. Opportunities still arise for the segment from increasingly networked production processes (Smart Production), from the unrelenting pursuit of increased productivity as well as from its positioning as a one-stop provider and the expansion of local value chains in the key economic regions.

In the Medical Technology segment, political and regulatory decisions can have a long-term effect on the reimbursement of costs for medical treatment and thus on willingness to invest in new treatment systems. Cuts in public budgets can have similar consequences. Refractive surgery is an elective procedure that patients pay for themselves. Demand therefore hinges on the general economic development. Furthermore, new product launches can be delayed or even rejected due to changes in product approval requirements. In principle, patients may be harmed due to malfunctions or misuse of medical devices or may be injured due to improper handling of personal data. This can result in substantial litigation costs and can cause long-term damage to the company's reputation. The steadily growing world population and rising life expectancy, which is likely to lead to increased demand for medical technology, are giving rise to growth opportunities for the Medical Technology segment. Further growth potential is inherent in the rapidly developing economies due to the growing demand for basic medical care.

The Consumer Markets segment is exposed to risks arising from fundamental changes in the market, ongoing consolidation in the industry and the concentration of customer structures. Other risks include persistent pressure on prices, the market entry of new providers previously unknown in the sector, as well as competitors who use alternative sales channels or deploy new technologies to establish their own production capacity. Substitution effects in the Consumer Products segment can also lead to risks from a change in consumer behavior. This could give rise to challenges at manufacturing sites. The licensing business in the market for camera lenses depends on the attractiveness of the ZEISS brand for partners of the segment. ZEISS counters this risk by means of a consistent brand strategy. Opportunities will still arise with regard to freeform technology in vision care and, in connection with this, innovative precision eyeglass lenses, the optimization of the value chain, new industry and technology trends, as well as new digital business and service models.

Overall statement on the risks faced by the company

When this report was prepared, no risks were discernible that could jeopardize the ability of the ZEISS Group to continue as a going concern. There are no significant differences for the overall assessment compared to the prior year. The Executive Board believes that the ZEISS Group has a solid foundation for further development and uses a systematic strategy and planning process to provide the resources required in order to leverage the opportunities.

SUBSEQUENT EVENTS

On 22 October 2018, Carl Zeiss Meditec signed an agreement to acquire IanTECH. IanTECH, Inc., with its registered office in Reno, Nevada (USA), is a privately owned company specialized in technical solutions for microinvasive cataract surgery. The company will be integrated in the Ophthalmic Devices strategic business unit. With this acquisition, Carl Zeiss Meditec has taken an important strategic step toward strengthening its technological position in cataract surgery. For more information, please refer to the section on subsequent events in note 32 of the Notes to the Consolidated Financial Statements.

There were no other significant events after the end of the fiscal year.

REPORT ON EXPECTED DEVELOPMENTS

Future conditions of business development

When these consolidated financial statements for 2017/18 were issued for publication, the global economy was still growing, albeit at a lower rate, with differences between the various regions. Economic momentum in the industrial nations is likely to weaken. The development in the emerging economies, in particular in Asia, should continue to be above average, although the pace in these countries will also be less dynamic. Surging growth rates will be seen again in Latin America, buoyed in particular by the improved outlook for Brazil.

The current prospects for the global economy are clouded by possible risk factors. Due to protectionist and politically motivated activities, the risk of a trade war with its long-term negative effects on global trade cannot be ruled out. Credit-financed investments provide growth impetus, but increasing indebtedness, rising interest rates and large outflows of cash also harbor risks. The unpredictable impact of Brexit, a possible further escalation of the political conflicts in the Middle East and West Asia, Ukraine and in North Korea as well as ongoing structural problems could negatively impact on investment activity of industry and the public sector.

Expected development of the markets and industries relevant for ZEISS

Semiconductor Manufacturing Technology

ZEISS assumes that the global semiconductor market will continue to grow in fiscal year 2018/19, albeit at a slightly weaker pace than in the prior year. The semiconductor industry is being boosted by the worldwide digitalization of numerous industries. Due to the current high expenditure in the equipment industry for chip fabs, ZEISS also expects growth in the relevant market segments in fiscal year 2018/19 despite the slight decline projected for the equipment market as a whole. Due to the investments of chip manufacturers in production equipment, ZEISS expects healthy demand in the DUV business and further orders for the current generation of EUVs. Memory overcapacity could cause growth in the semiconductor sector to slow in 2019. As always in the semiconductor sector, further development is characterized by great uncertainty.

Industrial Quality & Research

ZEISS expects business development in Industrial Quality & Research in a competitive environment to be stable overall. A slight improvement in investment behavior is expected for the US, while there are more positive indicators for business in EMEA and also in Asia. ZEISS also anticipates further growth through forward-looking projects, for example in additive manufacturing and electromobility. Positive impetus is expected for the industrial application of microscopes, while public subsidies for research are likely to still be restrictive.

Medical Technology

Medical devices and medical equipment will remain an attractive business field in the healthcare sector. ZEISS expects that growth drivers in the market for the Medical Technology segment, such as demographic trends and population growth as well as rising demand from the rapidly developing economies, will continue to exist. They will be supplemented by new technologies and applications, particularly in the area of minimally invasive surgery, which will contribute to the growth of the industry. From the customer's perspective, a better cost-benefit balance for medical technology products as well as increasing digitalization and systems integration are playing a key role in day-to-day work in doctors' offices and hospitals.

Consumer Markets

For business in the Consumer Markets segment, ZEISS expects global growth to remain stable. Major drivers of the development of the vision care market are demographic trends, rising income in the rapidly developing economies, increasing health awareness and growing demand for individualized precision eyeglass lenses. ZEISS expects the advancing digitalization in lens fitting and production, logistics, marketing, sales and customer service to result in major changes. ZEISS expects Consumer Products to face tougher competition. With the size of the market for cine lenses set to remain constant, increased competitive pressure is expected due to the entry of new competitors from Asia.

Overall statement on anticipated development

Due to the clear strategic focus and solid positioning of the segments in their respective markets, which ZEISS established and expanded in the past, mainly through its innovative strength, ZEISS plans further revenue growth to around €6b, with an EBIT margin of around 13% for fiscal year 2018/19. In light of the global economic development forecasts available when these consolidated financial statements for 2017/18 were issued for publication that indicate that volatility in the markets will increase, the Executive Board of Carl Zeiss AG considers the goals planned for fiscal year 2018/19 challenging.