Financial Report

Business Development

Grain Milling

Total turnover

781 CHF m

Share of Group turnover

32 %

Grain Milling, Bühler Group's largest business area, increased turnover substantially by 12% to CHF 781 million. This positive development helped Grain Milling to increase its market share in a number of industries. Order intake remained at CHF 743 million, which is slightly below the previous year.

Geographically, the Grain Milling business area experienced a particularly encouraging development in China and Turkey, driven by an increasing demand for complete installations in these regions. North America and South Asia also developed strongly. South America and Middle East & Africa recorded positive development, particularly in the maize processing area.

Grain Milling focused on bringing innovations successfully to market and further diversifying its product portfolio. Its position as a provider of total solutions has become an increasingly important competitive differentiator in emerging economies. With the introduction of Prime Masa Nixtamal, the division further underlined its innovative power. This solution uses substantially less water and produces a higher yield for the farmers. Other innovations included Jet-Mix, an innovative process for producing pre-ferment dough starters and sourdough, and a new dry-de-husking process.

Based on leading market positions, a strong order backlog, and a clear strategic direction, Grain Milling is entering 2017 with a positive outlook.

Grain Logistics

Total turnover

206 CHF m

Share of Group turnover

8 %

Grain Logistics achieved a slight increase of 0.3% in its turnover to CHF 206 million. The order intake decreased by 8.9% to CHF 212 million. With around 8% market share, the business unit was able to reinforce its strong position as one of the three largest players in the grain logistics industry.

The shared offering within the entire Bühler Group is a key differentiator in the market for Grain Logistics. In rice processing, for instance, Bühler is the only player that offers comprehensive solutions from the paddy to the processed grain of rice. As a result, Bühler became the global leader in rice processing in 2016 and also expanded its leading position in Asia. South America recorded an upturn after numerous challenging years. Cleaning machines and solutions for ship loading were particularly in demand in 2016 in that region.

Its advanced solutions and technology competencies were decisive in enabling the business to gain the largest single order in 2016. Grain Logistics was able to reinforce its market leadership position in the malting industry in 2016 and won all larger contracts in that area. An innovation highlight was the new Tubo conveying system, a mechanical system for three-dimensional transportation. It was introduced at the Bühler Networking Days and awarded Best Innovation by Bühler's customers.

Order books are full and key growth drivers are supporting the positive development of Grain Logistics in 2017. In particular, the business area is likely to make further progress in paddy processing as it strives to remain the market leader in malting solutions and rice processing. The service business also bears significant potential to grow for the business area.

Sortex & Rice

Total turnover

217 CHF m

Share of Group turnover

9 %

The turnover of Sortex & Rice increased by 6.6% to CHF 217 million, as the business area started the year with full order books. Due to the very low rice price, however, investment activities in the rice processing industry decreased throughout the year, which led to a 3% lower order intake, amounting to CHF 216 million.

Geographically, North and South America as well as Europe achieved excellent business results, whereas the Middle East and Africa remained slightly below expectations. South and Southeast Asia experienced low activities due to the low rice price. The decrease of activities in the rice processing industry was partly compensated by other sectors. 2016, the year of the pulses, brought strong orders for pulse-processing equipment. Optical sorting for nuts and coffee developed strongly as well.

The business area also further developed its plastic sorting offering. A strategic partnership enables the company to offer plastics recyclers a complete solution for plastic bottle and flake sorting. The Sortex & Rice business area also positioned itself excellently by rolling out a new technology for processing frozen fruits and vegetables. Extensive testing of the Sortex PolarVision – with its new camera technology – has shown that the sorting capacity is up to ten times better than that of comparable products on the market. Customers rewarded this high performance by ordering numerous machines.

The outlook 2017 depends on the development of the rice price. The price of rice is likely to increase due to currently very low inventory levels, which in turn will lead to higher business activities for Sortex & Rice in the year to come. Growth opportunities are also expected to emerge from the increasing requirement of food safety.

Value Nutrition

Total turnover

434 CHF m

Share of Group turnover

18 %

Turnover of Value Nutrition decreased significantly by 14.6% to CHF 434 million, compared to the previous year, which benefited from one large single order. The order intake increased significantly by 10.9% to 540 million. Overall, the business area was able to keep its market share.

The year started slowly, particularly in the areas of feed and pasta, while the nutrition and the service business were able to compensate somewhat with growth levels in the double-digit range. Feed, one of Bühler Group's strategic areas of growth, was able to strengthen its market presence, in particular thanks to a strong second half-year. Geographically, demand from Western Europe, South Asia, and China has developed well due to the expansion of the global supply chain from Asia. Uncertainty in Eastern Europe continues to put a strain on business activities in that region. North and South America developed at relatively low levels, while activities in Africa advanced well but depended on a small number of large projects.

The business area continued its strategy of offering innovative solutions to the market. Highlights included the feed portfolio for the global supply chain with CE Certification, the new oil cracker, the new food safe flaker, and the innovative drying solutions from Aeroglide, as well as the Ecothermatik pasta dryer, which saves up to 40% of thermal energy, offering economic and ecological advantages to the clients.

With full order books, Value Nutrition has a positive outlook for 2017. Growth is expected in particular in the Middle East, Africa, and Asia. Sales of individual machines and the service business are also expected to contribute to the positive development. The beneficial effect of the global supply chain is likely to remain in all areas.

Consumer Foods

Total turnover

236 CHF m

Share of Group turnover

10 %

Turnover of Consumer Foods decreased significantly by –11.3% to CHF 236 million, while the order intake increased by 10.5% to CHF 244 million. The Consumer Foods business area was able to retain its already high market share.

The most dynamic performance was reported in the chocolate area, also thanks to large orders for the state-funded expansion of the cocoa processing industry in West Africa. The growth in sales in the customer service business was equally positive. Coffee suffered a significant decrease in order intake, while a large order from the previous year resulted in an increase in turnover. Geographically, the picture is mixed: North America, Europe, and Africa retained their position, Japan showed signs of a recovery. Demand in the BRIC markets decreased clearly.

After the integration of the acquired chocolate specialist, Consumer Foods will, for the first time, be able to offer complete solutions from the receipt of goods to all confectionery end products. Investments in IoT solutions and the advancement of more compact solutions are also likely to have a positive long-term effect on the business.

Investment activity levels are likely to pick up in the consumer food industry. This trend combined with the increased order backlog at year-end suggest a positive development in 2017. Also, the key industry event Interpack in May is expected to have a positive effect on orders. The full offering, due to the integration of the acquired chocolate specialist, is likely to translate into orders and turnover relatively soon.

Die Casting

Total turnover

298 CHF m

Share of Group turnover

12 %

Die Casting increased its turnover by 7.3% to a record level of CHF 298 million and reinforced its market leadership position with a market share of 28%. With an order intake of CHF 290 million, the business area achieved the second-best result of its existence, only second to the year 2015, when Die Casting benefited from a single large order of CHF 40 million.

The year 2016 was characterized by the automotive industry's continued wave of investment. Cooperation with the original equipment manufacturers – the large car manufacturers – as well as the Tier 1 companies, was particularly encouraging. In China, growth was driven by strong investment from Chinese OEM's and Tier 1's. The business area continued its undisputed technological leadership position, offering extensive services and further advancing aluminum applications for the automotive industry. The complete portfolio of Bühler contributed to market success in all key industries. The launch of the new Ecoline S die-cast solution in Shanghai marked a highlight for the year. Casters will benefit from increases in productivity of up to 5% and energy savings of up to 10%.

With full order books, the business area expects the positive development to continue in 2017. Die Casting will continue to roll out its strategy of three hubs in North America, Europe, and China, ensuring proximity to its customers in the automotive industry. The planned expansion of the customer service business is also an important element of the growth strategy.

Grinding & Dispersion

Total turnover

88 CHF m

Share of Group turnover

4 %

Grinding & Dispersion achieved a strong increase in turnover and order intake to CHF 88 million and CHF 102 million respectively, up massively by 13.9% and 38.3% in comparison to the previous year. The strongest growth impulse came from the battery and inks sector. The individual machine business also went very well, while customer service remained comparative to the previous year.

The ink segment was driven by growing demand for liquid inks for packaging and digital printing. High-tech solutions, such as for LCD screens, were also in high demand. Geographically, most regions recorded lively market activities. Performance in China, Japan, and India was particularly dynamic.

The business area continued to innovate with its new continuous process for manufacturing electrode slurries – one of the core process steps in the production of lithium-ion batteries, which has a significant impact on the overall performance of the batteries. A large customer from China has placed the first substantial orders for production lines and aims to expand its production capacities with the new Bühler manufacturing process. With this proof of the industrial maturity of the process, Bühler is now uniquely positioned in the field of lithium-ion batteries – a future growth market driven by the boom in electric vehicles: by 2050, 50% of new vehicles are expected to be partly or completely driven by an electric motor.

With the advent of e-mobility, the largest growth market for the lithium-ion battery industry is opening up in Asia and in the midterm also in Europe and North America. In the growing market for liquid inks, Grinding & Dispersion strives to further leverage its position as a market leader.

Leybold Optics

Total turnover

151 CHF m

Share of Group turnover

6 %

All business units contributed to record turnover of CHF 151 million (up 11.1%) with good levels of business activity. The order intake increased even more, by 23.0% to CHF 163 million. As a result, Leybold Optics was able to expand its market share in all areas. Thanks to orders being a substantial 23% above the previous year's level, the capacities of the business area are full.

Demand has shown increases for solutions in all key areas: precision optics, optoelectronics, the packaging industry, and the coating of architectural glass. Geographically, growth mostly originated from the Asian and European markets.

The process know-how and innovative solutions combined with global service support are key differentiators for the Leybold Optics. The business area launched Leybold Optics ECS 1350, a new solution for the anti-reflective coating in spectacle optics in China. With DynaJet in Europe and its pendant AluMet for the Asian market, Leybold Optics has also developed a powerful solution for the metallization process of car headlights.

The outlook for 2017 looks promising for Leybold Optics. Growth trends such as Asia's increasing affluence, urbanization, and digitalization have potential for driving growth in this business area. The strategy of developing high-end products in Germany and the center of excellence in China for the Asian market is expected to contribute to the positive development of the business area going forward.

Financial Report
Bühler Group

Consolidated statement of income

	Notes	2016 CHF m	2015 CHF m
Sales revenue	3.1	2,448.6	2,412.3
Changes in inventories of finished goods and work in progress		5.1	4.1
Other operating income	3.2	22.0	23.6
Total operating income		**2,475.7**	**2,440.0**
Cost of materials		–1,047.4	–1,058.7
Employee benefit expenses	3.3	–793.2	–751.0
Other operating expenses	3.4	–408.2	–401.5
Net result from associates	4.3	4.6	4.5
Operating result before interest, taxes, depreciation and amortization (EBITDA)		**231.5**	**233.3**
Depreciation and amortization	4.1/4.2	–57.9	–56.2
Operating result before interest and taxes (EBIT)		**173.6**	**177.1**
Finance income	3.5	10.0	10.8
Finance costs	3.5	–3.8	–4.0
Financial result		**6.2**	**6.8**
Profit before taxes		**179.8**	**183.9**
Income taxes	3.6	–36.5	–41.2
Net profit		**143.3**	**142.7**
Attributable to:			
→ Owners of the parent		136.3	140.1
→ Non-controlling interests		7.0	2.6

Consolidated statement of comprehensive income

	Notes	2016 CHF m	2015 CHF m
Net profit		**143.3**	**142.7**
Other comprehensive income			
Translation differences of foreign operations		–5.2	–28.9
Cash flow hedges			
– Change in fair value		–1.0	3.8
– Realized through statement of income		3.4	–3.3
– Tax effect		–0.4	–0.1
Net loss on hedge of net investment		–1.1	–18.8
– Tax effect		0.1	1.4
Other comprehensive income to be reclassified to profit or loss in subsequent periods		**–4.2**	**–45.9**
Actuarial gains and losses on defined benefit plans	4.11.3	–1.0	–38.7
– Tax effect		1.6	6.9
Other comprehensive income not to be reclassified to profit or loss in subsequent periods		**0.6**	**–31.8**
Total other comprehensive income		**–3.6**	**–77.7**
Total comprehensive income		**139.7**	**65.0**
Attributable to:			
→ Owners of the parent		133.5	63.2
→ Non-controlling interests		6.2	1.8

Consolidated statement of financial position

Assets	Notes	2016 CHF m	2015 CHF m
Property, plant and equipment	4.1	415.1	400.4
Intangible assets	4.2	261.6	273.7
Investments in associates	4.3	33.5	29.0
Long-term financial assets	4.4	108.9	123.1
Deferred tax assets	3.6.4	43.0	38.5
Non-current assets		**862.1**	**864.7**
Inventories	4.5	365.6	347.8
Net assets of production orders in progress	4.6	326.9	291.3
Trade accounts receivable	4.7	532.3	506.4
Other accounts receivable, prepayments and accrued income	4.7	131.0	107.9
Current income tax assets		6.6	5.8
Marketable securities	2.3.2	60.2	63.2
Cash and cash equivalents		431.3	345.5
Current assets		**1,853.9**	**1,668.0**
Total assets		**2,716.0**	**2,532.7**

Equity and liabilities	Notes	2016 CHF m	2015 CHF m
Share capital	4.12	15.0	15.0
Capital reserves		185.1	185.1
Other reserves/retained earnings		1,048.2	929.9
Equity attributable to the owners of the parent		**1,248.3**	**1,130.0**
Non-controlling interests		**28.2**	**24.8**
Total equity		**1,276.5**	**1,154.8**
Long-term financial liabilities	2.2	122.7	136.6
Deferred tax liabilities	3.6.4	78.4	79.4
Defined benefit obligations	4.11.4	156.3	166.9
Long-term provisions	4.9	24.6	24.9
Non-current liabilities		**382.0**	**407.8**
Short-term financial liabilities	2.2	29.7	16.4
Trade accounts payable	4.8	242.2	240.5
Net liabilities of production orders in progress	4.6	366.0	338.7
Short-term provisions	4.9	44.7	46.3
Other short-term liabilities, accruals and deferred income	4.10	350.7	305.8
Current income tax liabilities		24.2	22.4
Current liabilities		**1,057.5**	**970.1**
Total liabilities		**1,439.5**	**1,377.9**
Total equity and liabilities		**2,716.0**	**2,532.7**

Consolidated statement of changes in equity

	Notes	Share capital CHF m	Capital reserve CHF m	Retained earnings CHF m
January 1, 2015		15.0	185.1	1,051.1
Dividends paid	5.6			–15.0
Changes in non-controlling interests	1.5			–22.7
Net profit				140.1
Other comprehensive income				–31.8
December 31, 2015		**15.0**	**185.1**	**1,121.7**
January 1, 2016		15.0	185.1	1,121.7
Dividends paid	5.6			–15.0
Net profit				136.3
Other comprehensive income				0.6
December 31, 2016		**15.0**	**185.1**	**1,243.6**

Hedge reserve CHF m	Available-for-sale reserve CHF m	Foreign currency translation reserves CHF m	Total reserves CHF m	Equity attributable to the owners of the parent CHF m	Non-controlling interests CHF m	Total equity CHF m
–4.2	0.8	–143.4	1,089.4	1,104.4	41.4	1,145.8
			–15.0	–15.0	–3.3	–18.3
			–22.7	–22.7	–15.1	–37.8
			140.1	140.1	2.6	142.7
0.4	0.0	–45.6	–77.0	–77.0	–0.8	–77.8
–3.8	**0.8**	**–189.0**	**1,114.8**	**1,129.8**	**24.8**	**1,154.6**
–3.8	0.8	–189.0	1,114.8	1,129.8	24.8	1,154.6
			–15.0	–15.0	–2.8	–17.8
			136.3	136.3	7.0	143.3
2.0	0.0	–5.4	–2.8	–2.8	–0.8	–3.6
–1.8	**0.8**	**–194.4**	**1,233.3**	**1,248.3**	**28.2**	**1,276.5**

Consolidated statement of cash flows

	Notes	2016 CHF m	2015 CHF m
Profit before taxes		179.8	183.9
Financial result	3.5	–6.2	–6.8
Operating result before interest and taxes (EBIT)		**173.6**	**177.1**
Depreciation and amortization	4.1/4.2	57.9	56.2
Other items not affecting cash flow		1.8	–2.3
Changes in provisions		–7.8	–3.7
Changes in trade accounts receivable		–25.7	–28.1
Changes in inventories		–17.4	–1.7
Changes in trade accounts payable		1.2	55.5
Changes in net assets/liabilities of production orders in progress		–14.7	–116.2
Changes in other net operating assets		23.3	–17.9
Gains/losses on disposal of fixed assets		0.2	0.6
Interest received		3.6	3.7
Interest paid		–1.6	–2.8
Income taxes paid		–32.4	–21.4
Cash flow from operating activities		**161.9**	**99.1**
Purchase of property, plant and equipment		–67.7	–50.4
Disposal of property, plant and equipment		9.5	5.1
Purchase of intangible fixed assets		–3.2	–3.6
Cash flow from business combinations of group companies, net of cash		–0.9	–7.4
Purchase of marketable securities		–22.4	–40.3
Disposal of marketable securities		29.9	11.7
Purchase of long-term financial assets		–6.2	–23.8
Disposal of long-term financial assets		7.3	3.2
Dividends received		3.9	1.3
Cash flow from investing activities		**–50.0**	**–104.4**
Repayment of financial liabilities		–7.6	–15.0
Acquisitions and other transactions with non-controlling interests	1.5	0.0	–37.8
Dividends paid of Bühler Holding AG		–15.0	–15.0
Dividends paid to non-controlling interests		–2.8	–3.3
Cash flow from financing activities		**–25.3**	**–71.2**
Translation differences		–0.8	–14.3
Changes in cash and cash equivalents		**85.8**	**–90.7**
Cash and cash equivalents at the beginning of period		345.5	436.1
Cash and cash equivalents at the end of period		431.3	345.5

Notes to the financial statements

1. Group information

1.1 General information

The consolidated financial statements of Bühler Group and its subsidiaries (collectively, the Group) for the year ended December 31, 2016, were authorized for issue in accordance with a resolution of the Board of Directors on February 7, 2017. Bühler Holding AG (the Company or the parent) is a company incorporated and domiciled in Switzerland whose shares are privately held. The registered office is located at Uzwil, Switzerland.

The Group is a globally active solutions provider for the industrial manufacturing of food and advanced materials. The worldwide solutions portfolio contains engineering, application development, manufacturing, services, and training.

These financial statements are the consolidated financial statements of Bühler Holding AG and its subsidiaries. The list of subsidiaries is presented on page 139.

The consolidated financial statements of the Bühler Group have been prepared in accordance with the International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB) and comply with Swiss law. The consolidated financial statements are based on the single-entity financial statements of the Group companies, which are prepared in accordance with consistent accounting principles. The consolidated financial statements are prepared under the historical cost convention. Any exceptions to this general rule are outlined in the respective note. The overall accounting principles applied to the Annual Report as a whole are described below. The accounting policies related to specific line items are described in the notes to which they relate.

Due to rounding, the numbers do not necessarily correspond exactly with the totals.

1.2 Use of estimates

The preparation of the consolidated financial statements in accordance with IFRS requires management to make estimates and assumptions that affect the reported amounts of revenue, expenses, assets, and liabilities and the related disclosures at the date of the financial statements. These estimates are based on management's best knowledge of current events and possible future measures. However, actual results could differ from those estimates.

If in future such estimates and assumptions, which are based on management's best knowledge at the date of the financial statements, deviate from the actual circumstances, the original estimates and assumptions will be modified as appropriate in the year in which the circumstances change.

The estimates and assumptions that may have a higher risk of causing a material adjustment to the carrying amounts of assets and liabilities within the next financial periods relate primarily to long-term construction contracts, goodwill and, to a lesser extent, defined benefit obligations, deferred tax assets, provisions, and disclosure of contingent liabilities at the end of the reporting period.

Estimates related to specific line items are described in the notes to which they relate.

1.3 Foreign currency translation

The individual financial statements of the Group companies are measured using the currency of the primary economic environment in which the entity operates (“the functional currency”) and are translated into Swiss francs for consolidation. Year-end exchange rates are used for the statement of financial position and annual average exchange rates for the statement of income. The consolidated statement of cash flows is also translated at annual average exchange rates.

Differences resulting from the application of these different exchange rates for the statement of financial position and the statement of income and from equity transactions are recognized directly in the consolidated statement of comprehensive income.

Goodwill arising on the acquisition of a foreign entity is expressed in the functional currency of the foreign operation and is translated at the closing rate.

Foreign currency transactions translated into the functional currency are accounted for at the exchange rates prevailing at the date of the transactions; gains and losses resulting from the settlement of such transactions and from the translation of monetary assets and liabilities denominated in foreign currencies are recognized in the statement of income, except when they are deferred outside the statement of income as qualifying cash flow hedges.

Foreign exchange differences arising on monetary items that form part of a company’s net investment in a foreign operation are reclassified to equity (currency translation adjustment) in the consolidated financial statements and are only fully recycled to the statement of income when Bühler Group loses control of a subsidiary or loses significant influence in an associate.

For foreign currency translation, the Bühler Group used the following exchange rates:

	Average exchange rates		Closing rates 31.12.	
	2016 CHF	2015 CHF	2016 CHF	2015 CHF
ARS	0.07	0.10	0.07	0.08
BRL	0.28	0.29	0.31	0.25
CAD	0.74	0.75	0.76	0.71
CNY	0.15	0.15	0.15	0.15
CZK	0.04	0.04	0.04	0.04
EUR	1.09	1.07	1.08	1.08
GBP	1.34	1.47	1.26	1.47
INR	0.01	0.02	0.02	0.01
JPY	0.01	0.01	0.01	0.01
MXN	0.05	0.06	0.05	0.06
SGD	0.71	0.70	0.71	0.70
THB	0.03	0.03	0.03	0.03
USD	0.98	0.96	1.03	0.99
ZAR	0.07	0.08	0.07	0.06

1.4 Principles of consolidation

Subsidiaries are all entities over which the Group has control. The Group controls an entity when the Group is exposed to, or has rights to, variable returns from its involvement with the entity and has the ability to affect those returns through its power to direct the activities of the entity. The cost of an acquisition is measured at the fair value of the consideration transferred at the date of exchange. For each business combination, the acquirer measures the non-controlling interest in the acquiree either at fair value or at the proportionate share of the acquiree's identifiable net assets. Acquisition costs incurred are expensed in the statement of income. Identifiable assets acquired and liabilities assumed in a business combination are measured initially at fair value at the date of acquisition, irrespective of the extent of any non-controlling interest assumed. When the Bühler Group acquires a business, it assesses the financial assets and liabilities assumed for appropriate classification and designation in accordance with the contractual terms, economic circumstances, and pertinent conditions as at the acquisition date.

If the business combination is achieved in stages, the acquisition date fair value of the Bühler Group's previously held equity interest in the acquiree is remeasured to fair value as at the acquisition date in the statement of income.

Any contingent consideration to be transferred by the Group is recognized at fair value at the acquisition date. Subsequent changes to the fair value of the contingent consideration are recognized in the statement of income.

Subsidiaries are consolidated from the date on which control is transferred to the Group and are no longer consolidated from the date that control ceases.

A change in the ownership interest of a subsidiary, without a loss of control, is accounted for as an equity transaction.

All intercompany transactions and balances between Group companies are eliminated in full.

Investments in associated companies are accounted for using the equity method of accounting. These are companies over which the Group generally holds between 20% and 50% of the voting rights and has significant influence but does not exercise control. Goodwill arising on the acquisition is included in the carrying amount of the investment in associated companies. Equity accounting is discontinued when the carrying amount of the investment together with any long-term interest in an associated company reaches zero, unless the Group has in addition either incurred or guaranteed additional obligations in respect to the associated company.

Investments below 20% are recognized at fair value and presented as non-current financial assets. Changes in fair value are recognized directly in other comprehensive income.

The list of significant Group companies can be found on page 139.

1.5 Additions and disposals of Group companies

Additions

2016
There were no significant additions in 2016.

2015
Acquisition of Hosokawa Bepex GmbH, Leingarten, Germany. On September 30, 2015, the Group acquired 100% of the shares in Hosokawa Bepex GmbH, Leingarten (renamed to Bühler GmbH, Leingarten). The company is a global plant supplier in the field of confectionery and bakery and offers solutions ranging from engineering, design, manufacturing, and installation to commissioning of entire plants.

From the date of acquisition, Bühler GmbH, Leingarten, contributed CHF 7.7 million of revenue and CHF 0.03 million to profit before tax. If the combination had taken place at the beginning of the year, revenue would have been CHF 21.0 million and profit before tax would have been CHF –1.9 million.

Establishment of Buhler Pakistan (Pvt.) Ltd. On April 28, 2015, the Group founded Buhler Pakistan (Pvt.) Ltd. with a capital of PKR 30.0 million. The company conducts sales activities and provides services to our customers in Pakistan.

Establishment of Shijiazhuang Buhler Mechanical Co. Ltd. On June 6, 2015, the Group founded Shijiazhuang Buhler Mechanical Co. Ltd. with a capital of CNY 2.0 million. The company conducts sales activities and provides services to our customers in China.

Establishment of Buhler DMCC, Dubai. On May 21, 2015, the Group founded Buhler DMCC, Dubai, with a capital of AED 0.05 million. The company is the new regional headquarters for Middle East & Africa, conducts sales support and provides services to our customers in the region.

Acquisitions of additional interests

Acquisition of additional interest in Buhler (Changzhou) Machinery Co. Ltd., Liyang City. On January 18, 2015, the Group bought additional 20% shares of Buhler (Changzhou) Machinery Co. Ltd., increasing its ownership to 100%. A cash consideration of CHF 29.7 million was paid to the non-controlling shareholders. The carrying value of the net assets of Buhler (Changzhou) Machinery Co. Ltd. (excluding goodwill on the original acquisition) was CHF 50.1 million. Following is a schedule of additional interest acquired in Buhler (Changzhou) Machinery Co. Ltd.:

	CHF m
Cash consideration paid to non-controlling shareholders	29.9
Carrying value of the additional interest	10.0
Difference recognized in retained earnings	19.9

Acquisition of additional interest in Buhler (Guangzhou) Food Machinery Co. Ltd., Guangzhou City. On August 8, 2015, the Group bought additional 20% shares of Buhler (Guangzhou) Food Machinery Co. Ltd., increasing its ownership to 100%. A cash consideration of CHF 2.3 million was paid to the non-controlling shareholders. The carrying value of the net assets of Buhler (Guangzhou) Food Machinery Co. Ltd. (excluding goodwill on the original acquisition) was CHF 5.8 million. Following is a schedule of additional interest acquired in Buhler (Guangzhou) Food Machinery Co. Ltd.:

	CHF m
Cash consideration paid to non-controlling shareholders	2.3
Carrying value of the additional interest	1.2
Difference recognized in retained earnings	1.1

Acquisition of additional interest in Buhler Yijiete Color Sorting Machinery (Hefei) Co. Ltd., Hefei. On April 10, 2015, the Group bought additional 30% shares of Buhler Yijiete Color Sorting Machinery (Hefei) Co. Ltd., increasing its ownership to 100%. A cash consideration of CHF 5.5 million was paid to the non-controlling shareholders. The carrying value of the net assets of Buhler Yijiete Color Sorting Machinery (Hefei) Co. Ltd. (excluding goodwill on the original acquisition) was CHF 12.2 million. Following is a schedule of additional interest acquired in Buhler Yijiete Color Sorting Machinery (Hefei) Co. Ltd.:

	CHF m
Cash consideration paid to non-controlling shareholders	5.5
Carrying value of the additional interest	3.8
Difference recognized in retained earnings	1.7

	Market value 2015 CHF m
Cash and cash equivalents	0.4
Trade accounts receivable	2.8
Other receivables	4.1
Inventories	10.1
Net assets of production orders in progress	0.0
Current assets	**17.4**
Property, plant and equipment	7.2
Intangible assets	3.0
Financial assets	0.0
Deferred tax asset	1.3
Non-current assets	**11.5**
Trade accounts payable	–1.1
Net liabilities of production orders in progress	0.0
Short-term provisions	–0.8
Other short-term liabilities, accruals and deferred income	–3.1
Current liabilities and provisions	**–5.0**
Deferred tax liabilities	–1.1
Non-current liabilities and provisions	–18.5
Non-current liabilities and provisions	**–19.6**
Change in net assets	**4.4**
Non-controlling interests	0.0
Goodwill arising on acquisitions	3.4
Gain on sale of business	0.0
Addition (+) to/disposal (–) from the Group	**7.8**
Outstanding sale/purchase price payment and other non-cash items	0.0
Cash disposed (–)/acquired (+)	0.4
Cash flow from changes in the scope of consolidation	**–7.4**

The goodwill in the amount of CHF 3.4 million recognized in prior year comprises the value of expected synergies arising from the acquisitions.

The acquisition-related costs in prior year were not material and were recognized as other operating expenses in the statement of income.

Disposals

Any non-current assets held for sale and discontinued operations are presented separately on the face of the balance sheet. This includes all those assets associated with the discontinuation of entire lines of business or geographical areas of operation, which are to be realized through a sale transaction rather than through continued use. Reclassifications are only made if management is committed to the sale and has started seeking buyers. In addition, the asset or disposal group must be available for sale in its current condition and its sale must be highly probable within one year. Non-current assets or disposal groups classified as held for sale are no longer depreciated. If necessary, they are written down for impairment.

The income and expenses of discontinued operations are separated from ordinary income and expenses in the statement of income for both the reporting period and the prior year down to the “profit after tax” level. The resulting gain or loss (after taxes) is presented separately in the statement of income.

There was no significant disposal in 2016 and 2015.

1.6 Significant Group companies

Name of company	Country	Share capital in millions of local currency	Participation rate	Holding/ Financing Company	Held by
Switzerland					
Bühler Holding AG, Uzwil	CH	CHF 15.0		o	
Bühler AG, Uzwil	CH	CHF 30.0	100,0%		Bühler Holding AG, Uzwil
Bühler-Immo Betriebs AG, Uzwil	CH	CHF 0.1	100,0%		Bühler Holding AG, Uzwil
Bühler Management AG, Uzwil	CH	CHF 0.1	100,0%		Bühler Holding AG, Uzwil
UBIF AG, Uzwil	CH	CHF 4.0	100,0%		Bühler Holding AG, Uzwil
Bühler + Scherler AG, St. Gallen	CH	CHF 0.8	60,0%		Bühler Holding AG, Uzwil
Europe					
Bühler CZ s.r.o., Zamberk	CZ	CZK 265.2	100,0%		Bühler Holding AG, Uzwil
Bühler Deutschland GmbH, Beilngries	DE	EUR 0.025	100,0%		Bühler AG, Uzwil
Bühler GmbH, Beilngries	DE	EUR 16.0	100,0%		Bühler Deutschland GmbH, Beilngries
Bühler Deutschland Holding GmbH, Braunschweig	DE	EUR 0.025	100,0%	o	Bühler AG, Uzwil
Bühler Barth GmbH, Freiberg a.N.	DE	EUR 1.137	100,0%		Bühler Deutschland Holding GmbH, Braunschweig
Bühler GmbH, Bergneustadt	DE	EUR 0.275	100,0%		Bühler Deutschland Holding GmbH, Braunschweig
Bühler GmbH, Braunschweig	DE	EUR 12.629	100,0%		Bühler Deutschland Holding GmbH, Braunschweig
Leybold Optics Verwaltungs GmbH, Alzenau	DE	EUR 0.444	100,0%	o	Bühler AG, Uzwil
Bühler Alzenau GmbH, Alzenau	DE	EUR 0.05	100,0%		Leybold Optics Verwaltungs GmbH, Alzenau
Bühler GmbH, Leingarten	DE	EUR 2.432	100,0%		Bühler Deutschland Holding GmbH, Braunschweig
Buhler S.A., Madrid	ES	EUR 0.06	100,0%		Bühler Holding AG, Uzwil
Bühler Haguenau S.A.S., Haguenau	FR	EUR 0.2	100,0%		Bühler Holding AG, Uzwil
Buhler UK Holdings Ltd., London	GB	GBP 3.6	100,0%	o	Bühler Holding AG, Uzwil
Buhler Ltd., London	GB	GBP 1.0	100,0%		Buhler UK Holdings Ltd., London
Buhler Sortex Ltd., London	GB	GBP 1.25	100,0%		Buhler UK Holdings Ltd., London
Control Design & Development Ltd., Peterborough	GB	GBP 0.0001	100,0%		Buhler UK Holdings Ltd., London
Sortex Ltd., London	GB	GBP 0.001	100,0%		Buhler UK Holdings Ltd., London
Buhler Brescia s.r.l., Brescia	IT	EUR 0.01	100,0%		Bühler AG, Uzwil
Buhler S.p.A., Milano	IT	EUR 2.665	100,0%		Bühler Holding AG, Uzwil
Bühler B.V., Oldenzaal	NL	EUR 0.034	100,0%		Bühler Holding AG, Uzwil

Name of company	Country	Share capital in millions of local currency	Participation rate	Holding/ Financing Company	Held by
North America					
Buhler US Holding Inc., Minneapolis	**US**	USD 0.05	100,0%	o	Bühler Holding AG, Uzwil
Buhler Aeroglide Corporation, Cary	**US**	USD 0.004	100,0%		Buhler US Holding Inc., Minneapolis
Buhler Inc., Minneapolis	**US**	USD 3.2	100,0%		Buhler US Holding Inc., Minneapolis
BuhlerPrince Inc., Holland	**US**	USD 0.375	100,0%		Buhler US Holding Inc., Minneapolis
Latin America					
Buhler S.A., Buenos Aires	**AR**	ARS 1.1	100,0%		Bühler Holding AG, Uzwil
Buhler S.A., Joinville	**BR**	BRL 20.685	100,0%		Bühler Holding AG, Uzwil
Bühler Sanmak Industria de Maquinas Ltda., Blumenau	**BR**	BRL 10.0	100,0%		Bühler Holding AG, Uzwil
Buhler S.A. de C.V., Toluca	**MX**	MXN 50.0	100,0%		Bühler Holding AG, Uzwil
Middle East and Africa					
Buhler (Private Joint Stock Co.), Teheran	**IR**	IRR 9250.0	100,0%		Bühler Holding AG, Uzwil
Buhler Limited, Nairobi	**KE**	KES 900.0	100,0%		Bühler Holding AG, Uzwil
Buhler (Pty) Ltd., Johannesburg	**ZA**	ZAR 11.371	100,0%		Bühler Holding AG, Uzwil
Buhler Properties (Pty) Ltd., Johannesburg	**ZA**	ZAR 0.0001	100,0%		Buhler (Pty) Ltd., Johannesburg

Name of company	Country	Share capital in millions of local currency	Participation rate	Holding/ Financing Company	Held by
Asia					
Bangsheng Bio-Technology Co. Ltd., Guangzhou	CN	CNY 8.51	100,0%		Bühler Holding AG, Uzwil
Buhler (Changzhou) Machinery Co. Ltd., Liyang City	CN	CNY 320.0	100,0%		Buhler (China) Holding Co. Ltd., Wuxi
Buhler (China) Holding Co. Ltd., Wuxi	CN	USD 123.6	100,0%	o	Bühler Holding AG, Uzwil
Buhler (China) Machinery Manufacturing Co. Ltd., Wuxi	CN	CNY 150.0	100,0%		Buhler (China) Holding Co. Ltd., Wuxi
Buhler (Guangzhou) Food Machinery Co. Ltd., Guangzhou City	CN	CNY 51.0	100,0%		Buhler (China) Holding Co. Ltd., Wuxi
Buhler (Wuxi) Commercial Co. Ltd., Wuxi	CN	USD 5.5	100,0%		Buhler (China) Holding Co. Ltd., Wuxi
Buhler Sortex Optical Equipment (Hefei) Co. Ltd., Hefei	CN	CNY 18.0	100,0%		Buhler (China) Holding Co. Ltd., Wuxi
Buhler Aquatic Equipment (Changzhou) Co. Ltd., Liyang	CN	CNY 10.0	80,0%		Buhler (China) Holding Co. Ltd., Wuxi
Wuhan Mingbo Electromechanical Equipment Co. Ltd., Wuhan	CN	CNY 5.0	80,0%		Buhler (China) Holding Co. Ltd., Wuxi
Buhler Equipment (Xian) Co. Ltd., Xi'an	CN	CNY 28.0	100,0%		Bühler Holding AG, Uzwil
Buhler Food Ingredients (Guangzhou) Co. Ltd., Guangzhou	CN	USD 3.8	100,0%		Bühler Holding AG, Uzwil
Buhler Mechanical Equipment (Shenzhen) Co. Ltd., Shenzhen	CN	USD 4.0	100,0%		Bühler Holding AG, Uzwil
Wuxi Buhler Machinery Manufacturing Co. Ltd., Wuxi	CN	USD 23.0	51,0%		Bühler Holding AG, Uzwil
Buhler Leybold Optics Equipment (Beijing) Co. Ltd., Beijing	CN	CNY 10.1	100,0%		Bühler Alzenau GmbH, Alzenau
Buhler (India) Private Ltd., Bangalore	IN	INR 100.0	100,0%		Bühler Holding AG, Uzwil
Buhler K.K., Yokohama	JP	JPY 250.0	100,0%		Bühler Holding AG, Uzwil
Buhler Asia Private Limited, Singapore	SG	USD 13.675	100,0%	o	Bühler Holding AG, Uzwil
Buhler Vietnam Company Limited, Ho Chi Minh City	VN	VND 47.893	94,0%		Buhler Asia Private Limited, Singapore
Buhler (Thailand) Ltd., Bangkok	TH	THB 110.0	100,0%		Buhler Asia Private Limited, Singapore
PT Buhler Indonesia, Jakarta	ID	IDR 10,500	100,0%		Buhler Asia Private Limited, Singapore

2. Financial risk management

The Board of Directors of Bühler Group assesses corporate risks by undertaking systematic risk identification and analysis. Based on this assessment, the measures required for risk management in the company are defined and monitored. The corresponding meeting of the Board of Directors took place on December 14, 2016.

Capital management. One of the Group's main objectives is to apply a well-managed capital management system in order to ensure the continuity of the Group and generate added value for all stakeholders. Another goal is to optimize the cost of capital. Bühler does not have to comply with any capital requirements imposed by third parties, since the extent of its financial liabilities to third parties is of a negligible magnitude. Group management reviews the capital structure of the Group and the equity of Group companies on a regular basis. As at December 31, 2016, the equity ratio stood at 47.0% (prior year: 45.6%).

As a result of its global activities, the Group is exposed to financial market risks (currency risk, interest rate risk, price risk), credit risks, and liquidity risks. Financial risk management focuses on the management of currency risk and credit risk. Derivative financial instruments are used to hedge certain risks. The risk management function is exercised by the Group Treasury department in close collaboration with the operating units, as well as in accordance with treasury directives.

Market risk. Bühler is exposed to market risks that relate primarily to exchange rates, interest rates, and the fair value of investments in liquid financial assets. The Group monitors these risks on an ongoing basis and reports to the Finance Committee every month. In order to manage the volatility associated with these risks, the Group employs financial derivative instruments such as forward contracts and options.

Exchange rate risk. The Group reports in Swiss francs and is therefore exposed to exchange rate movements primarily in European, North American, South American and Asian currencies. Various contracts are concluded with a view to offsetting exchange rate-related changes in the value of assets, liabilities, and future transactions. Bühler also uses currency forwards and options for this purpose. Net investments in foreign Group companies are long-term in nature. Their fair value changes with exchange rates. Over the very long term, however, the change in the inflation rate should match the corresponding exchange rate movements, so that changes in the fair value of foreign investments will offset the exchange rate-related changes in value. For this reason, Bühler only hedges its investments in foreign Group companies in exceptional cases.

The following table shows the hypothetical repercussions of changes in the key currency pairs on profit after taxes. The volatility value used in the calculation is that of one-year historical volatility as per December 31.

2016 Currency pair	EUR/CHF	USD/CHF
Volatility	7.5%	10.3%
Effect in profit and loss (rate increase) CHF m	7.4	–1.9
Effect in profit and loss (rate decrease) CHF m	–7.5	1.9

2015 Currency pair	EUR/CHF	USD/CHF
Volatility	7.7%	10.4%
Effect in profit and loss (rate increase) CHF m	0.2	–3.5
Effect in profit and loss (rate decrease) CHF m	–0.9	3.2

Commodity risk. Bühler is exposed to a certain degree to commodity price risk due to fluctuations in the prices of commodities required for production process. The Group does not conclude any significant futures, forwards, or options to hedge future commodity purchases.

Equity security risk. The Group buys shares in other companies in order to invest its liquid funds. It does so in accordance with the treasury strategy approved by the Board of Directors. This sets precise limits, including investments in shares. Bühler limits the risk across all asset classes by holding less than 5% of the Group's invested funds in any single outside company. Call or put options are covered by cash positions.

Interest rate risk. Interest rate risk arises from changes in interest rates that may affect the net assets and results of the Bühler Group. These risks are managed and monitored centrally. The robust liquidity situation and the fact that the Group is not reliant on external financing mean that interest rate changes have no material impact on the financial result of the Group.

Credit risk. Credit risks arise in connection with liquid funds, derivative financial instruments, investments with banks, marketable securities, and receivables from customers. In order to minimize potential losses on customers receivables, an Operational Risk Management (ORM) guideline has been drawn up. The evaluation of our customers' financial reliability and/or the terms of payment and hedging on our deliveries are key concerns in this respect. In addition, it can be stated that none of our customers has outstanding payments accounting for more than 5% of Group sales. The nominal value of the trade accounts receivable less valuation allowances is considered an approximation of the receivables' fair value. The book values stated represent the maximum credit risk. The default risk on marketable securities, derivative financial instruments, money market contracts, current-account deposits, and time deposits is minimized on one hand through the exclusive purchase of securities with at least an A rating, and on the other by selecting only financial institutions with at least an investment grade rating as the Group's main global banks. The risks are monitored rigorously and kept within stipulated parameters. Group guidelines ensure that the Group's credit risk vis-à-vis financial institutions is limited. The limits set are regularly monitored and adjusted. The Group does not expect to incur any loss as a result of its counterparties being unable to meet their contractual obligations, nor does it have any cluster risks with respect to individual sectors or countries.

Information to analysis of outstanding receivables and allowance for bad debts can be found in Note 4.7.

Liquidity risk. Liquidity risk refers to the risk of the Group being unable to fulfill its obligations when due or at a reasonable price. The Group Treasury department is responsible for monitoring liquidity, financing, and repayment. In addition, liquidity and financing risks and the related processes and guidelines are checked by corporate management. Bühler manages its liquidity risk on a consolidated basis, taking into account business policy, tax, financial and regulatory considerations. Free cash flow represents the main source of financing. If required, the Group also has recourse to approved lines of credit. Corporate management monitors the Group's net liquidity position by means of ongoing forecasts based on expected cash flows.

2.1 Financial assets

A distinction is made between the following three categories:

- Financial assets "at fair value through profit or loss" are generally acquired with the intention of generating a profit from short-term fluctuations in price.
- "Loans and receivables" include loans granted and accounts receivable.
- All other financial assets are classified as "available for sale."

Financial assets "at fair value through profit or loss" are recognized on acquisition at cost and subsequently measured at fair value, with fair value changes recognized in the financial result in the period in which they arise.

"Available for sale" financial assets are measured subsequent to their initial recognition at fair value, with unrealized gains and losses recognized in other comprehensive income. When the financial asset is either impaired or disposed of, the cumulative gain or loss previously recognized in the other comprehensive income is reclassified from equity to the statement of income. Provided that fair value cannot be reliably determined, available-for-sale financial assets are measured at cost. This applies to financial assets that do not have a quoted market price in an active market and decisive parameters cannot be reliably estimated to be used in valuation models for the determination of fair value.

Purchases and sales are recognized at the trade date rather than at the settlement date.

In 2014, the IASB issued the final version of IFRS 9 Financial Instruments, which replaces IAS 39 and all previous versions of IFRS 9. IFRS 9 is effective for annual periods beginning on or after January 1, 2018. The Group expects that these amendments will not have a significant impact and plans to adopt the new standard on the required effective date.

2016	Cash and cash equivalents CHF m	Securities CHF m	Receivables and accruals CHF m	Financial assets CHF m	Total book value CHF m	Total market value CHF m
Cash reserves	431.3				431.3	431.3
Financial assets "at fair value through profit or loss"		60.2			60.2	60.2
Loans and receivables			663.3	84.1	747.4	747.4
Financial assets "available for sale"		14.4		3.6	18.0	18.0
Total financial assets	**431.3**	**74.6**	**663.3**	**87.7**	**1,256.9**	**1,256.9**

As at December 31, 2016, capital commitments of CHF 13.0 million (prior year: 7.7 million) have not yet been drawn.

2015	Cash and cash equivalents CHF m	Securities CHF m	Receivables and accruals CHF m	Financial assets CHF m	Total book value CHF m	Total market value CHF m
Cash reserves	345.5				345.5	345.5
Financial assets “at fair value through profit or loss”		63.2			63.2	63.2
Loans and receivables			614.3	89.9	704.2	704.2
Financial assets “available for sale”		12.2		4.9	17.1	17.1
Total financial assets	**345.5**	**75.4**	**614.3**	**94.8**	**1,130.0**	**1,130.0**

2.2 Financial liabilities

Financial liabilities consist mainly of borrowings, which are initially recognized with the proceeds received, net of transaction cost incurred. Subsequently, the borrowings are measured at amortized cost using the effective interest method with any difference between net proceeds and the principal value due on redemption being recognized in the statement of income over the term of the borrowings. Financial liabilities are derecognized when its contractual obligations are discharged, cancelled or expired.

2016	Financial liabilities CHF m	Payables/ accruals and deferred income CHF m	Total book value CHF m	Total market value CHF m
Financial liabilities at amortized acquisition costs	135.1	592.9	728.0	728.0
Financial liabilities “at fair value through profit and loss”	17.3		17.3	17.3
Total financial liabilities	**152.4**	**592.9**	**745.3**	**745.3**

2015	Financial liabilities CHF m	Payables/ accruals and deferred income CHF m	Total book value CHF m	Total market value CHF m
Financial liabilities at amortized acquisition costs	136.6	546.3	682.9	682.9
Financial liabilities “at fair value through profit and loss”	16.4		16.4	16.4
Total financial liabilities	**153.0**	**546.3**	**699.3**	**699.3**

Maturity analysis

2016	Book value Dec 31, 2016 CHF m	Cash outflow Total CHF m	< 1 year CHF m	1–5 years CHF m	> 5 years CHF m
Trade accounts payable to third parties	238.9	238.9	238.9		
Liabilities to associates, non-consolidated companies and related parties	139.1	139.1	8.0	76.1	55.0
Liabilities others/accruals and deferred income	374.2	374.2	373.0	1.2	
Derivative financial instruments held for hedging net	3.6	3.6	3.4	0.2	
Total	**755.8**	**755.8**	**623.3**	**77.5**	**55.0**

2015	Book value Dec 31, 2015 CHF m	Cash outflow Total CHF m	< 1 year CHF m	1–5 years CHF m	> 5 years CHF m
Trade accounts payable to third parties	236.8	236.8	236.8		
Liabilities to associates, non-consolidated companies and related parties	152.4	152.4	20.2	77.2	55.0
Liabilities others/accruals and deferred income	316.1	316.1	311.3	4.8	
Derivative financial instruments held for hedging net	6.4	6.4	7.1	–0.7	
Total	**711.7**	**711.7**	**575.4**	**81.3**	**55.0**

2.3 Marketable securities and derivative financial instruments

Derivative financial instruments and hedge accounting. Derivative financial instruments are initially recognized at cost and subsequently at fair value (replacement cost). The method applied in recognizing the resulting profits or losses depends on whether a derivative was designated for hedging purposes, and if so, on the type of position being hedged. Certain derivatives may be used to hedge foreign currency risks in connection with a transaction that is highly likely to take place in future, or to hedge a fixed commitment (hedging of cash flows). When the hedge is implemented, the Group documents the relationship between the hedging instrument and the risk being hedged, as well as setting out risk management objectives and strategies. Furthermore, the Group records its assessment of the effectiveness of the hedging instrument with respect to the hedged cash flows, both when the hedging transaction is concluded and on an ongoing basis.

The full fair value of a hedging derivative is classified as a non-current asset or liability when the remaining maturity of the hedged item is more than twelve months; it is classified as a current asset or liability when the remaining maturity of the hedged item is less than twelve months. Trading derivatives are classified as a current asset or liability.

The hedging of cash flows is undertaken for certain anticipated Group-internal transactions as well as for the foreign currency risk of firm commitments. The effective portion of the change in fair value of derivatives used for the hedging of cash flows is recognized in other comprehensive income. The ineffective portion of the hedging instrument is immediately recognized as financial result in the statement of income.

Amounts accumulated in other comprehensive income are recycled in the statement of income in the periods when the hedged item affects profit or loss. When a forecasted transaction is no longer expected to occur, the cumulative gain or loss that was recorded in other comprehensive income is immediately transferred to the statement of income.

Derivatives not designated as hedging instruments are accounted for at fair value through profit or loss. Changes in the fair value of these derivative instruments are recognized immediately as financial result in the statement of income.

Marketable securities. Marketable securities include those that are held for trading without participation features. Securities included in financial assets are categorized as available for sale.

Futures and options were entered into with banks mainly to hedge currency risks. The following positions were open as of December 31, 2016:

2.3.1 Derivative financial instruments	Contract or underlying principal amount 2016 CHF m	2015 CHF m	Positive fair values 2016 CHF m	2015 CHF m	Negative fair values 2016 CHF m	2015 CHF m
Currency-related instruments						
Forward foreign exchange rate contracts	951.7	975.4	6.9	7.5	16.9	16.8
→ held for trading	596.1	645.5	3.6	4.5	10.0	7.4
→ cash flow hedges (effective part)	355.6	329.9	3.3	3.0	6.9	9.4
Over-the-counter currency options	16.1	26.3	0.1	0.1	0.1	0.0
Total of currency-related instruments	**967.8**	**1,001.7**	**7.0**	**7.6**	**17.0**	**16.8**
Equity-related instruments						
Over-the-counter equity options	30.0	0.0	0.0	0.0	0.8	0.0
Total of equity-related instruments	**30.0**	**0.0**	**0.0**	**0.0**	**0.8**	**0.0**
Options	46.1	26.3	0.1	0.1	0.9	0.0
Futures	951.7	975.4	6.9	7.5	16.9	16.8
Sum of derivative financial instruments	**997.8**	**1,001.7**	**7.0**	**7.6**	**17.8**	**16.8**
Thereof included in securities and in short-term financial liabilities	974.8	952.9	6.7	6.5	17.3	16.3
Thereof included in other long-term financial assets and financial liabilities	23.0	48.8	0.3	1.1	0.5	0.5

	USD CHF m	EUR CHF m	Other currencies CHF m	Total 2016 CHF m	Total 2015 CHF m
Currency-related instruments					
Forward foreign exchange rate contracts	297.9	482.4	171.4	951.7	975.4
→ held for trading	215.4	263.2	117.5	596.1	645.5
→ cash flow hedges	82.5	219.2	53.9	355.6	329.9
Over-the-counter currency options	0.0	16.1	0.0	16.1	26.3
Total of currency-related instruments	**297.9**	**498.5**	**171.4**	**967.8**	**1,001.7**
Equity-related instruments					
Over-the-counter equity options	0.0	0.0	30.0	30.0	0.0
Total of equity-related instruments	**0.0**	**0.0**	**30.0**	**30.0**	**0.0**
Options	0.0	16.1	30.0	46.1	26.3
Futures	297.9	482.4	171.4	951.7	975.4
Sum of derivative financial instruments	**297.9**	**498.5**	**201.4**	**997.8**	**1,001.7**

Positive replacement values are included in securities or long-term financial assets and negative replacement values are included in financial liabilities.

2.3.2 Marketable securities	2016 CHF m	2015 CHF m
Equity securities	4.8	4.2
Bonds	9.5	9.4
Derivative financial instruments	6.7	6.5
Accrued interest on debt securities	0.0	0.0
Other securities	39.2	43.1
Total marketable securities	**60.2**	**63.2**

2.4 Estimation of fair values

The fair values of financial instruments that are actively traded on markets are based on the relevant trading exchange prices (offer prices) on the balance sheet reference date. Instruments of this nature are classified as Level 1. The fair values of financial instruments that are not actively traded on markets (e.g., derivative OTC instruments) are determined using valuation models. If all the parameters required for the valuation are based on observable market data, the instrument in question is classified as Level 2. If one or more parameters are based on unobservable market data, the instrument is classified as Level 3. In the period under review as well as in the prior year no transfer occurred within the Levels.

2016	CHF m	Level 1	Level 2	Level 3	Total
Financial assets “at fair value through profit or loss”		53.5			53.5
Derivative financial assets			7.0		7.0
Financial assets “available for sale”			3.6	14.4	18.0
Total financial assets		**53.5**	**10.6**	**14.4**	**78.5**
Derivative financial liabilities			17.8		17.8
Total financial liabilities		**0.0**	**17.8**	**0.0**	**17.8**

2015	CHF m	Level 1	Level 2	Level 3	Total
Financial assets “at fair value through profit or loss”		56.8			56.8
Derivative financial assets			7.6		7.6
Financial assets “available for sale”			4.9	12.2	17.1
Total financial assets		**56.8**	**12.5**	**12.2**	**81.5**
Derivative financial liabilities			16.8		16.8
Total financial liabilities		**0.0**	**16.8**	**0.0**	**16.8**

3. Detailed information on consolidated statement of income

3.1 Sales revenue

Revenue is recognized when it is probable that the economic benefits associated with the transaction will flow to the entity and the amount of the revenue can be measured reliably. Revenue is measured at the fair value of the consideration received net of sales taxes and discounts. Revenue from the sale of goods is recognized when delivery has taken place and the transfer of risks and rewards of ownership has been completed.

The Group accounts for customer projects using the percentage-of-completion method. Revenue (including an estimated share of the outcome of the contract) is recognized by reference to the stage of completion. The stage of completion is determined according to the cost-to-cost method. The percentage-of-completion method involves the use of estimates and forecasts concerning future costs; actual costs may differ from these estimates. The forecasts are reviewed on a regular basis and adapted where necessary. These changes affect costs, the stage of completion, and both realized and anticipated profits. Any changes in estimates are recognized in the period in which they occur. Losses identified on long-term construction contracts are recognized as an expense immediately. Losses on long-term construction contracts occur when the expected contract costs exceed the expected revenue.

CHF 1,777.9 million (prior year: CHF 1,753.4 million) of the total operating income was determined using the percentage-of-completion method in the reporting period.

In 2014, the IASB issued the final version of IFRS 15 Revenue from Contracts with Customers, which will supersede all current revenue recognition requirements under IFRS. IFRS 15 is effective for annual periods beginning on or after January 1, 2018. The Group is currently assessing the impact of IFRS 15 and plans to adopt the new standard on the required effective date.

3.2 Other operating income

	2016 CHF m	2015 CHF m
Earnings from coordination of consortium business	0.0	1.4
Interest income from trade finance	2.1	1.2
Rental income	0.9	0.4
Gains from sale of fixed assets	2.3	0.9
Other operating income related parties	0.7	0.4
Others	16.0	19.3
Total	**22.0**	**23.6**

“Others” comprises a number of individually immaterial items which cannot be allocated to another line item.

3.3 Employee benefit expenses

	2016 CHF m	2015 CHF m
Wages and salaries	607.7	578.3
Social security and employee benefit expenses	116.9	112.9
Other personnel expenses	68.6	59.8
Total	**793.2**	**751.0**

3.4 Other operating expenses

	2016 CHF m	2015 CHF m
Administration expenses	104.0	105.8
Rental and leasing expenses, dues	31.1	28.1
Energy, maintenance and repairs	29.3	30.3
Travel expenses	79.4	77.5
Outbound freight costs	66.6	63.5
Consultancy fees	13.4	10.0
Marketing costs	17.7	18.7
Agency fees	15.5	13.3
Other operating expenses related parties	25.2	26.0
Others	26.0	28.3
Total	**408.2**	**401.5**

3.5 Financial result

	2016 CHF m	2015 CHF m
Interest income	4.1	4.5
Interest income from related parties	0.7	0.8
Realized gains from securities	5.2	4.2
Other financial income	0.0	1.3
Total finance income	**10.0**	**10.8**
Interest expenses	–0.3	–0.9
Interest expenses from related parties	–1.5	–1.5
Realized losses from securities	–0.3	–0.5
Fair value adjustments net	1.7	–0.6
Foreign exchange gains and losses net	–1.1	1.3
Other financial expenses	–2.3	–1.8
Total finance expense	**–3.8**	**–4.0**
Total	**6.2**	**6.8**

The continuously low interest rates in most major currencies resulted in an interest result including interest from related parties of CHF 3.0 million (prior year: CHF 2.9 million). Due to strict hedging of foreign currency risks the exchange rate fluctuations had no material impact on the foreign exchange result (2016: CHF –1.1 million, 2015: CHF 1.3 million).

3.6 Taxes

Income taxes comprise the tax expense in respect of all recognized profits for the reporting period. They include current and deferred income taxes. Current income taxes are calculated on taxable profit. Provisions for deferred taxes are calculated according to the liability method. Deferred taxes are recognized for temporary differences between the carrying amounts of assets and liabilities in the consolidated statement of financial position and their tax base taking into account actual or expected local tax rates. Changes in deferred tax balances are recognized in the statement of income, except when they relate to items recognized outside the statement of income, in which case the deferred tax is treated accordingly.

Current income tax relating to items recognized directly in equity is recognized in equity and not in the statement of income.

Deferred tax assets are only recognized for temporary differences and unused tax loss carry-forwards to the extent that it is probable that future taxable profit will be available against which temporary differences or unused tax losses can be utilized. This assessment is based on estimates and therefore includes a degree of uncertainty.

3.6.1 Income taxes	2016 CHF m	2015 CHF m
Income taxes relating to the reporting period	–40.1	–39.0
Income taxes relating to prior periods	–1.1	1.5
Deferred taxes due to temporary differences	3.4	–2.2
Deferred taxes due to recognition of tax loss carry-forwards	1.4	–1.4
Deferred taxes due to changes in tax rates	–0.1	–0.1
Total	**–36.5**	**–41.2**
Deferred taxes recognized directly in shareholders' equity	1.3	8.2

3.6.2 Reconciliation of income taxes	2016 CHF m	2015 CHF m
Profit before taxes	179.8	183.9
Components of tax expenses:		
Income taxes at anticipated tax rate	–40.1	–40.4
Income and expenses not subject to tax	0.7	–1.6
Income taxes relating to prior periods	–1.1	1.5
Deferred taxes due to changes in tax rates	–0.1	–0.1
Effect of tax loss carry-forwards	1.2	0.5
Effect of losses without recognition of deferred tax assets	–2.7	–3.3
Other impacts	5.6	2.2
Income taxes disclosed (current and deferred)	**–36.5**	**–41.2**
Total income taxes in % of profit before taxes	**20.3%**	**22.4%**

The anticipated tax rate was 22.3% (prior year: 22.0%) and consisted of the weighted average of the applicable local tax rates for income taxes. The tax rate decreased to 20.3% in 2016 from 22.4% in 2015. Contributory factors for the resulted tax rate included a sustainable tax management and the existence of a special tax effect in China.

3.6.3 Tax loss carry-forwards	2016 CHF m	2015 CHF m
Expiry		
Unlimited	86.4	77.8
In more than five years	22.7	22.0
In two to five years	34.7	35.8
Within one year	1.3	0.2
Total	**145.1**	**135.8**
Tax loss carry-forwards accounted for in deferred taxes	110.5	106.8
Tax effect on tax loss carry-forwards unaccounted for	8.5	7.0

The change in tax loss carry-forwards results from the use of tax losses in particular in China, Germany, and Spain as well as from the impact of additional tax loss carry-forwards in particular in Germany, China, and South East Asia.

3.6.4 Deferred tax asset (+)/liability (–) per line item	2016 CHF m	2015 CHF m
Tangible fixed assets	–8.0	–12.0
Post-employment benefits	28.9	32.9
Provisions	–9.8	–3.5
Other items	–77.0	–87.5
Tax loss carry-forwards	30.5	29.1
Total	**–35.4**	**–41.0**
Recognized on the balance sheet as deferred tax liabilities	–78.4	–79.4
Recognized on the balance sheet as deferred tax assets	43.0	38.5

Deferred tax assets and liabilities are offset if there is a legally enforceable right to set them off and if the calculations of income taxes relate to the same taxation authority.

3.7 Research and development costs

Research costs are recognized in the statement of income in the period in which they are incurred. Development costs are capitalized only if, and to the extent that, the IFRS criteria are met and it is probable that the present value of the expected returns will exceed the development costs. Capitalized development costs are amortized on a systematic basis over the period in which the returns are expected to flow to the Group.

Research and development costs directly charged to the statement of income in the reporting period amounted to CHF 108.5 million (prior year: CHF 102.4 million).

4. Detailed information on consolidated statement of financial position

4.1 Property, plant and equipment

Property, plant and equipment is valued at acquisition or construction cost less depreciation and write-downs for impairment. Items of property, plant and equipment are depreciated on a straight-line basis over their estimated useful life, except for land, which is not depreciated. Estimated useful lives of major classes of depreciable assets are as follows:

→ Building shell:	40–80 years
→ Installations/extensions:	20–25 years
→ Machinery and technical equipment:	10 years
→ Other tangible fixed assets:	3–10 years

The estimated useful life of the assets is regularly reviewed and, if necessary, the future depreciation charge is accelerated.

Costs are only included in the asset's carrying amount when it is probable that economic benefits associated with the item will flow to the Group in future periods and the cost of the item can be measured reliably.

Leases. Leases of property, plant and equipment where the Group has substantially all the risks and rewards of ownership are classified as finance lease. Property, plant and equipment acquired through a finance lease is capitalized at the date of the commencement of the lease term at the present value of the minimum future lease payment or, if lower, at the amount equal to the fair value of the leased asset as determined at the inception of the lease. The associated liabilities are recognized as either current or non-current financial liabilities, depending on their due dates.

Leases where substantially all the risks and rewards of ownership are not transferred to the Group are classified as operating leases. Payments under operating leases are charged to the statement of income on a straight-line basis over the period of the lease.

Assets under finance leases where the Bühler Group acts as lessor are recognized as receivables in the amount of the net investment. The risks and rewards incidental to ownership are transferred to the lessee. Lease income from these finance leases is subsequently recognized over the term of the lease based on the effective interest method.

In 2016, the IASB issued the final version of IFRS 16 Leases, which replaces IAS 17. IFRS 16 is effective for annual periods beginning on or after January 1, 2019. The Group is currently assessing the impact of IFRS 16 and plans to adopt the new standard on the required effective date.

Borrowing costs. Borrowing costs which are directly attributable to the acquisition, construction, or production of a qualified asset are capitalized as part of the cost of that asset.

Impairment of assets. At each reporting date, the Group assesses whether there is any indication that an asset may be impaired. If any such indication exists, the recoverable amount of the asset is estimated in order to determine the extent of the impairment loss, if any. Where it is not possible to estimate the recoverable amount of an individual asset, the Group estimates the recoverable amount of the smallest cash-generating unit to which the asset belongs. The recoverable amount is the higher of an asset's or cash-generating unit's fair value less costs to sell and its value in use. If the recoverable amount of an asset or cash-generating unit is estimated to be less than its carrying amount, the carrying amount of the asset or cash-generating unit is reduced to its recoverable amount. Impairment losses are recognized immediately in the statement of income.

Where an impairment loss is subsequently reversed, the carrying amount of the asset or cash-generating unit is increased to the revised estimate of its recoverable amount. However, this increased amount cannot exceed the carrying amount that would have been determined had no impairment loss been recognized for that asset or cash-generating unit in prior periods. A reversal of an impairment loss is recognized immediately in the statement of income.

Acquisition cost	Land and buildings CHF m	Machinery and technical equipment CHF m	Other tangible assets CHF m	Assets under construction CHF m	Total CHF m
January 1, 2015	297.8	303.3	134.4	27.8	763.3
Additions	3.5	12.9	9.0	25.2	50.6
Disposals	–7.0	–24.2	–4.7	–0.2	–36.2
Changes in the scope of consolidation	9.1	4.3	3.8	0.0	17.2
Reclassifications	22.6	7.9	4.3	–31.9	2.9
Translation differences	–14.4	–14.0	–7.3	–1.4	–37.1
December 31, 2015	**311.6**	**290.2**	**139.5**	**19.5**	**760.7**
Additions	15.0	16.3	12.7	23.8	67.8
Disposals	–0.8	–19.6	–12.2	–2.2	–34.8
Changes in the scope of consolidation	0.0	0.0	0.0	0.0	0.0
Reclassifications	11.9	0.1	1.9	–14.0	–0.1
Translation differences	–2.7	–0.2	0.2	–0.1	–2.8
December 31, 2016	**335.0**	**286.8**	**142.1**	**26.9**	**790.8**

Depreciation					
January 1, 2015	–78.7	–173.8	–103.2	–0.3	–356.0
Additions	–8.6	–19.1	–11.2	–0.1	–39.0
Disposals	3.3	22.5	4.5	0.0	30.3
Changes in the scope of consolidation	–3.5	–3.4	–3.0	0.0	–9.9
Impairment	0.0	0.0	0.0	0.0	0.0
Reclassifications	0.1	–1.2	–1.8	0.0	–2.9
Translation differences	2.9	8.4	5.8	0.0	17.2
December 31, 2015	**–84.5**	**–166.6**	**–108.8**	**–0.4**	**–360.3**
Additions	–9.5	–19.2	–11.7	–0.2	–40.6
Disposals	0.4	14.3	10.5	0.0	25.2
Changes in the scope of consolidation	0.0	0.0	0.0	0.0	0.0
Impairment	0.0	–0.1	0.0	0.0	–0.1
Reclassifications	–0.5	0.2	0.0	0.2	–0.1
Translation differences	0.4	0.1	–0.3	0.0	0.2
December 31, 2016	**–93.7**	**–171.3**	**–110.3**	**–0.4**	**–375.7**

Net book values					
January 1, 2016	227.0	123.6	30.7	19.1	400.4
December 31, 2016	241.3	115.5	31.8	26.5	415.1

As in the previous year, the Group did not enter in financial lease contracts as lessee. Net loss on disposal of tangible fixed assets amounted to CHF –0.2 million (prior year: net loss CHF –0.6 million). Commitments relating to property, plant and equipment, which are not shown in the balance sheet, amounted to CHF 53.8 million (prior year: CHF 57.8 million) and are mainly related to investments in the factories in China.

4.2 Intangible assets

Goodwill represents the excess of the aggregate of the consideration transferred and the amount recognized for the non-controlling interest over the fair value of the net identifiable assets acquired and liabilities assumed. Goodwill on acquisitions of subsidiaries is included in intangible assets. Goodwill on acquisitions of associates is included in investments in associates.

Goodwill is tested annually for impairment or whenever there are impairment indicators and is carried at cost less accumulated impairment losses.

If the consideration transferred is less than the fair value of the net assets of the subsidiary acquired, the difference is recognized directly in the statement of income.

On disposal of a subsidiary, associate or joint venture, the related goodwill is included in the determination of profit or loss on disposal.

Goodwill on acquisitions of subsidiaries and interests in joint ventures is allocated to cash-generating units for the purpose of impairment testing. Impairment losses relating to goodwill cannot be reversed in future periods.

Acquired patents, licenses, trademarks, and similar rights are initially recorded at cost and amortized on a straight-line basis over their estimated useful life or a period not exceeding 15 years. Intangible assets acquired through business combinations are carried in the statement of financial position at the fair value allocated in the acquisition accounting and amortized over their estimated useful life.

Other intangible assets mainly comprise customer relationships, technologies, patents, and software.

Acquisition cost	Goodwill CHF m	Other intangible assets CHF m	Total CHF m
January 1, 2015	273.1	155.3	428.4
Additions	0.0	3.7	3.7
Disposals	0.0	–3.0	–3.0
Changes in the scope of consolidation	3.4	5.0	8.4
Reclassifications	–0.0	3.3	3.3
Translation differences	–18.2	–10.3	–28.5
December 31, 2015	**258.3**	**154.0**	**412.3**
Additions	0.9	3.1	4.0
Disposals	0.0	–0.6	–0.6
Changes in the scope of consolidation	0.0	0.0	0.0
Reclassifications	0.0	0.4	0.4
Translation differences	1.1	0.5	1.6
December 31, 2016	**260.3**	**157.4**	**417.7**

Amortization			
January 1, 2015	–29.7	–97.7	–127.4
Additions	0.0	–17.2	–17.2
Disposals	0.0	3.0	3.0
Impairment	0.0	0.0	0.0
Changes in the scope of consolidation	0.0	–2.1	–2.1
Reclassifications	0.0	–3.2	–3.2
Translation differences	1.8	6.5	8.3
December 31, 2015	**–27.9**	**–110.7**	**–138.6**
Additions	0.0	–17.3	–17.3
Disposals	0.0	0.6	0.6
Impairment	0.0	0.0	0.0
Changes in the scope of consolidation	0.0	0.0	0.0
Reclassifications	0.0	–0.2	–0.2
Translation differences	–0.3	–0.3	–0.6
December 31, 2016	**–28.2**	**–127.9**	**–156.1**

Net book values			
January 1, 2016	230.4	43.3	273.7
December 31, 2016	232.1	29.5	261.6

Impairment test

The recoverable amounts have been determined based on a value-in-use calculation. This calculation uses cash flow projections based on financial budgets approved by the respective division management covering a five-year period.

Key assumptions used in value-in-use calculations. The calculations of values in use are most sensitive to the following assumptions:

→ Gross margin
→ Discount rate
→ Growth rate used to extrapolate cash flows beyond the budget period
→ Raw materials price inflation
→ Market share assumptions

Gross margin – Gross margins are based on average values reported in the three years preceding the start of the forecast period. These gross margins are adjusted based on the latest available information regarding the actual gross margins as well as anticipated efficiency improvements over the forecast period.

Discount rate – The discount rates which are used to calculate the discounted present value of the future cash flows are derived from a capital asset pricing model using market data such as the yield on a ten-year government bond of the respective country or specific country risk premiums.

Growth rate estimates – The assumptions used in the calculation reflect the long-term expected growth rate of the operational business and are based on the growth strategy of the Group.

Raw materials price inflation – Estimates are obtained from published indices relating to specific commodities. Past actual raw materials price movements have been used as an indicator of future price movements.

Market share assumptions – The management assumes that the unit's position, relative to that of its competitors, may not change significantly over the forecast period. Market share is expected to be stable over the forecast period.

Result of the impairment test. The impairment tests performed on December 31, 2016, support the value of the carrying amount. Like in prior year, no impairment needs to be recognized.

Sensitivity to changes in assumptions. A possible increase in the discount rate of 1 percentage point result in the carrying amount not exceeding its recoverable amount (same as in prior year). A drop in sales of 5 percentage points result in the carrying amount not exceeding its recoverable amount (same as in prior year).

Goodwill 2016	Book value CHF m	Base data used Discount rate	Growth rate
Leybold Optics Verwaltungs GmbH, Alzenau	78.6	8.8%	1.2%
Buhler Aeroglide Corporation, Cary	63.7	9.6%	1.2%
Bühler Deutschland GmbH, Beilngries	36.9	8.8%	1.2%
Bühler Barth GmbH, Freiberg a.N.	15.9	8.8%	1.2%
Buhler Yijiete Color Sorting Machinery (Hefei) Co. Ltd., Hefei	7.0	11.2%	3.1%
Bangsheng Bio-Technology Co. Ltd., Guangzhou	6.7	11.2%	3.1%
Wuhan Mingbo Electromechanical Equipment Co. Ltd., Wuhan	6.0	11.2%	3.1%
Bühler Haguenau S.A.S., Haguenau	5.1	9.2%	1.2%
Bühler GmbH, Leingarten	4.3	8.8%	1.2%
Others	7.9	9.2%–11.0%	0.9%–2.5%
Total at December 31, 2016	**232.1**		

Goodwill 2015	Book value CHF m	Base data used Discount rate	Growth rate
Leybold Optics Verwaltungs GmbH, Alzenau	79.1	9.9%	1.2%
Buhler Aeroglide Corporation, Cary	61.2	10.5%	1.2%
Bühler Deutschland GmbH, Beilngries	37.1	9.9%	1.2%
Bühler Barth GmbH, Freiberg a.N.	16.0	9.9%	1.2%
Buhler Yijiete Color Sorting Machinery (Hefei) Co. Ltd., Hefei	7.3	12.2%	3.1%
Bangsheng Bio-Technology Co. Ltd., Guangzhou	6.9	12.2%	3.1%
Wuhan Mingbo Electromechanical Equipment Co. Ltd., Wuhan	6.2	12.2%	3.1%
Bühler Haguenau S.A.S., Haguenau	5.1	10.4%	0.9%
Bühler GmbH, Leingarten	3.5	9.9%	1.2%
Others	8.0	10.3%–12.4%	0.9%–2.5%
Total at December 31, 2015	**230.4**		

4.3 Investments in associates

Net book values	Share in equity CHF m	Goodwill CHF m	2016 CHF m	2015 CHF m
January 1	16.7	12.3	29.0	18.0
Reclassifications	0.0	0.0	0.0	0.0
Additions	0.0	0.0	0.0	10.1
Impairment	0.0	0.0	0.0	0.0
Share of net profit	4.6	0.0	4.6	4.5
Dividends received	0.0	0.0	0.0	–0.9
Translation differences	–0.1	0.0	–0.1	–2.7
December 31	**21.2**	**12.3**	**33.5**	**29.0**

Translation differences are recognized in other comprehensive income. The attributable net result is shown under "other operating income" in the statement of income.

Cumulative values of the associated companies	2016 CHF m	2015 CHF m
Share of sales revenue	33.4	31.8
Share of net profit	4.6	4.5
Balance sheet values:		
Non-current assets	14.4	14.6
Current assets	23.9	21.9
Non-current liabilities	8.4	10.5
Current liabilities	8.7	9.3
Shareholders' equity	21.2	16.7

The associated companies mainly comprise three companies, two in Southern Europe and one in Switzerland. Bühler has a shareholding of 26%, 49%, and 35% respectively. The figures are based on available preview closing data as of December 31, 2016.

4.4 Long-term financial assets

December 31, 2016	Due 1–5 years CHF m	> 5 years CHF m	Total CHF m
Securities	0.0	14.4	14.4
Overfunding of post-employment benefit plans	0.0	6.9	6.9
Loans to non-consolidated companies	0.2	0.0	0.2
Loans to associated companies	9.3	0.0	9.3
Other non-current financial assets	74.6	3.5	78.1
Total	**84.1**	**24.8**	**108.9**

December 31, 2015	Due 1–5 years CHF m	> 5 years CHF m	Total CHF m
Securities	0.0	12.2	12.2
Overfunding of post-employment benefit plans	0.0	16.1	16.1
Loans to non-consolidated companies	0.5	0.0	0.5
Loans to associated companies	16.1	0.0	16.1
Other non-current financial assets	73.3	4.9	78.2
Total	**89.9**	**33.2**	**123.1**

4.5 Inventories

Inventories are carried at the lower of cost or net realizable value. The cost of finished goods, semi-finished goods, and work in progress includes raw materials, direct labor, and other directly attributable costs and overheads based on the normal capacity of production facilities, excluding borrowing costs. Cost is determined using the standard cost method. Standard costs are regularly reviewed and, if necessary, revised in light of current conditions. Net realizable value is the estimated selling price less cost to completion and selling expenses. Obsolete inventories and goods with a low rate of inventory turnover are written down.

In prior year, value adjustments deducted from inventories amounted to CHF –36.6 million. No material reversals of value adjustments of the prior year were recognized in the reporting year.

Advance payments to suppliers are also included in inventories.

	Gross value CHF m	Value adjustments CHF m	2016 CHF m	2015 CHF m
Raw materials and supplies	158.4	–20.6	137.8	124.7
Unfinished goods	51.8	–11.4	40.4	42.1
Finished goods and merchandise	77.5	–4.5	73.0	71.7
Work in progress	79.2	–1.2	78.0	83.7
Advance payments to suppliers	36.4	0.0	36.4	25.6
Total	**403.3**	**–37.7**	**365.6**	**347.8**

4.6 Production orders in progress

	2016 CHF m	2015 CHF m
Production orders in progress	482.0	449.0
Advance payments from customers	–155.1	–157.7
Net assets of production orders in progress	**326.9**	**291.3**
Production orders in progress	13.7	–30.3
Advance payments from customers	–379.7	–308.4
Net liabilities of production orders in progress	**–366.0**	**–338.7**
Accumulated costs and recognized profits	1,965.9	1,766.8

4.7 Accounts receivable

Trade and other accounts receivable are carried at the original invoice amount less allowances made for doubtful accounts, trade discounts, volume rebates, and similar items. Financing of customer orders using the Group's own funds as part of its treasury strategy is included in this item.

Trade accounts receivable include supplier credits of CHF 84.4 million (prior year: CHF 73.4 million), which are financed in accordance with the treasury strategy.

	2016 CHF m	2015 CHF m
→ from third parties	538.2	512.4
→ from non-consolidated companies	3.9	3.5
→ from associates	0.3	0.5
→ from related parties	0.0	0.1
Allowance for bad debts	–10.1	–10.1
Total trade accounts receivable	**532.3**	**506.4**

	2016 CHF m	2015 CHF m
Value added tax credits	36.4	38.2
Other accounts receivable		
→ from third parties	55.4	47.4
→ from non-consolidated companies	1.0	1.9
Prepayments and accrued income	38.3	20.5
Allowance for bad debts	–0.1	–0.1
Total other accounts receivable	**131.0**	**107.9**

Receivables outstanding analysis

2016	Total book value Dec 31, 2016 CHF m	Not due CHF m	Overdue < 3 months CHF m	4–6 months CHF m	7–9 months CHF m	10–12 months CHF m	> 12 months CHF m
Accounts receivable trade and other	668.2	527.4	64.9	32.8	11.3	7.4	24.4
Allowance for bad debts	–10.2	0.0	–0.4	0.0	–0.5	–0.2	–9.1
Associated companies and other related parties	5.3	5.3					
Total accounts receivable, net	**663.3**	**532.7**	**64.5**	**32.8**	**10.8**	**7.2**	**15.3**

2015	Total book value Dec 31, 2015 CHF m	Not due CHF m	Overdue < 3 months CHF m	4–6 months CHF m	7–9 months CHF m	10–12 months CHF m	> 12 months CHF m
Accounts receivable trade and other	618.5	512.1	52.2	17.3	9.4	7.2	20.3
Allowance for bad debts	–10.1	0.0	–0.6	0.0	–0.3	–0.3	–8.9
Associated companies and other related parties	5.9	5.9					
Total accounts receivable, net	**614.3**	**518.0**	**51.6**	**17.3**	**9.1**	**6.9**	**11.4**

Allowance for bad debts

	2016 CHF m	2015 CHF m
January 1	–10.1	–9.7
Additions	–4.5	–4.2
Consumption	1.5	1.6
Release	2.7	1.6
Translation differences	0.2	0.6
December 31	–10.2	–10.1

4.8 Trade accounts payable

	2016 CHF m	2015 CHF m
→ to third parties	239.0	236.8
→ to associates	0.7	1.4
→ to non-consolidated companies	0.7	0.6
→ to related parties	1.8	1.7
Total	**242.2**	**240.5**

4.9 Short- and long-term provisions

Provisions are recognized when Bühler has a legal or constructive obligation arising from past events, an outflow of resources embodying economic benefits to settle the obligation is probable, and a reliable estimate can be made of this amount.

When the Group expects some or all of a provision to be reimbursed, for example, under an insurance contract, the reimbursement is recognized as a separate asset, but only when the reimbursement is virtually certain. The expense relating to a provision is presented in the statement of profit or loss net of any reimbursement.

If the effect of the time value of money is material, provisions are discounted using a current pre-tax rate that reflects, when appropriate, the risks specific to the liability. When discounting is used, the increase in the provision due to the passage of time is recognized as a finance cost.

Warranty provisions are created with a view to meet potential guarantee obligations arising from the sale of machinery and technical equipment. The calculation is based on historic values as well as recognized claims.

Provisions for personnel expenses mainly include long-term employee benefits, such as long-service benefits, partial retirement, jubilee benefits, and deferred compensation plans.

Among other things the other provisions include provisions for pending legal cases, other project risks as well as a provision for restructuring of CHF 1.8 million (prior year: CHF 1.9 million).

Approximately 37% (prior year: 36%) of the cash outflows of the long-term provisions are expected to materialize within the next three years.

	Provisions for warranties CHF m	Provisions for personnel expenses CHF m	Other provisions CHF m	2016 CHF m	2015 CHF m
January 1	34.7	25.9	10.5	71.2	85.9
Additions	23.0	13.3	19.6	55.9	43.3
Utilization	–18.9	–9.2	–15.6	–43.7	–41.1
Release	–8.0	–1.4	–4.3	–13.7	–12.9
Changes in the scope of consolidation	0.1	–0.1	0.0	0.0	1.2
Reclassification	0.1	0.0	–0.1	–0.0	0.4
Translation differences	0.0	–0.1	–0.2	–0.3	–5.6
December 31	**31.0**	**28.4**	**9.9**	**69.3**	**71.2**
Thereof short-term	25.1	10.9	8.7	44.7	46.3
Thereof long-term	5.9	17.5	1.2	24.6	24.9

The Group recognizes a collective valuation allowance based on its past experience of warranty costs on projects with similar conditions. Other known risks and risks related to projects with special conditions are estimated on a case-by-case basis and measured individually. The actual warranty costs incurred may differ from the costs provided for.

4.10 Other short-term liabilities, accruals and deferred income

	2016 CHF m	2015 CHF m
Value added tax owed	13.3	9.5
Advance payments	140.1	97.2
Other liabilities		
→ to third parties	38.0	37.0
→ to non-consolidated companies	1.0	2.2
→ to related parties	0.9	14.2
Personnel-related accruals	78.6	73.8
Other accruals and deferred income	78.8	71.9
Total	**350.7**	**305.8**

4.11 Defined benefit obligations

The company's main defined benefit pension plans are in Switzerland and Germany. The defined benefit plans in Switzerland are funded through legally separate trustee administered funds. The cash funding of these plans, which may from time to time involve special payments, is designed to ensure that present and future contributions should be sufficient to meet future liabilities. The defined benefit plans in Germany are partially unfunded.

Pension plans in Switzerland. The company's Swiss pension plans contain a cash balance benefit formula, accounted for as a defined benefit plan. Employer and employee contributions are defined in the pension fund rules in terms of an age-related sliding scale of percentages of salary. Under Swiss law the pension fund guarantees the vested benefit amount as confirmed annually to members. Interest may be added to member balances at the discretion of the Board of Trustees. At retirement date members have the right to take their retirement benefit as a lump sum, an annuity or part as a lump sum with the balance converted to a fixed annuity at the rates defined in the fund rules. The Board of Trustees may change the annuity at their discretion subject to the plan's funded status including sufficient free funds as determined according to Swiss statutory valuation rules.

Swiss pension law requires the Board of Trustees to take measures to resolve a statutory underfunding. The possible measures affect both employers and employees (risk sharing).

Pension plans in Germany. The company's German pension plans have defined benefit rights based on their length of service and/or final pensionable pay. The employer gives a direct promise to the employee to pay him a certain amount once he retires. At retirement date the value of their benefits is paid as an annuity. The company is required by German law to increase pensions in payment all three years according to price inflation, as measured by the Consumer Price Index or according to comparable pay grades. Direct pension promises are usually funded via book reserve accruals. In 2008, the company set up a trust fund to fund their pension liabilities for Bühler GmbH, Braunschweig. No material business combinations/curtailments/settlements occurred during the reported financial period.

Status of the company's defined benefit plans. The status of the company's defined benefit plans using actuarial assumptions determined in accordance with IAS 19 is summarized below.

Employee benefits – defined benefit plans. These plans are generally funded through payments to legally independent pension or insurance funds.

The aggregate of the present value of the defined benefit obligation and the fair value of plan assets for each plan is recorded in the balance sheet as net defined benefit liability or net defined benefit asset under long-term financial assets. The defined benefit obligation is determined annually by independent actuaries using the projected unit credit method. If the fair value of the plan assets exceeds the present value of the defined benefit obligation, only a net pension asset is recorded, taking account of the asset ceiling.

Pension costs consist of three elements: service costs, net interest, and remeasurements of employee benefits.

Service costs are part of personnel expenses and consist of current service costs, past service costs (including gains/losses from plan amendments or curtailments) and gains/losses from plan settlements.

Net interest is recorded as part of personnel expenses and is determined by applying the discount rate to the net defined liability or net defined asset that exists at the beginning of the year.

The gains and losses resulting from the actuarial valuation are immediately recorded in other comprehensive income as remeasurements of employee benefits. The return on plan assets (excluding interest based on the discount rate) and any change in the effect of an asset ceiling are also recorded in this item. Remeasurements of employee benefits are not recycled through the income statement at any later point in time.

Pension assets and pension liabilities in different defined benefit plans are not offset unless the Group has a legally enforceable right to use the surplus in one plan to settle obligations in the other plan.

Employee benefits – defined contribution plans. In addition to the defined benefit plans described above, some Group companies sponsor defined contribution plans based on local practices and regulations. The Group's contributions to defined contribution plans are charged to the statement of income in the period to which the contributions relate.

Employee benefits – other long-term employment benefits. Other long-term employment benefits include jubilee, early retirement or other long-term service benefits, as well as deferred compensation, if not due to be settled within twelve months after the year-end.

The obligations for other long-term employment benefits are disclosed as provisions for personnel expenses. The measurement of these obligations differs from defined benefit plans in that all actuarial gains and losses are recognized immediately in the statement of income.

4.11.1 Actuarial assumptions	2016	2015
Discount rate (weighted)	0.7%	1.6%
Future salary increases	1.5%	1.5%
Future pension increases	0.2%	0.2%

The discount rates are determined by referencing market yields at the end of the reporting period on AA- and AAA-rated corporate bonds. In recent years, longevity has increased in all major countries in which the company sponsors pension plans. The company sets mortality assumptions after considering the most recent statistics available and uses generational mortality tables to estimate probable future mortality improvements.

Risk Sharing. Due to the current interest rate environment and increasing life expectancy, the defined benefit obligation was valued for the first time in 2016 using a risk sharing approach. This approach reflects the shared burden among employer and employees to keep the pension fund balanced in case this is necessary. The assumptions changed relate to the possible measures provided by Swiss pension law. This effect is disclosed in Note 4.11.3.

Sensitivities of significant actuarial assumptions. The discount rate and the future increase in salaries were identified as significant actuarial assumptions. The following impacts on the defined benefit obligation are to be expected:

- 0.25% increase/decrease in the discount rate would lead to an increase of 3.5% (prior year: 3.5%)/ a decrease of 3.8% (prior year: 3.5%) in the defined benefit obligation.
- 0.25% increase/decrease in the expected increase in salaries would lead to a decrease of less than 0.3% (prior year: 0.5%)/increase of less than 0.4% (prior year: 0.5%) in the defined benefit obligation.

The sensitivity analysis is based on realistically possible changes as of the end of the reporting year.

The average duration of the defined benefit plan obligation at the end of the reporting period is 14.3 years (prior year: 13.9 years).

The cost of defined benefit pension plans and other long-term employee benefits is determined using actuarial valuations. Actuarial valuations involve making assumptions about discount rates, future salary increases, mortality rates, and future pension increases. Due to the long-term nature of these plans, such estimates are subject to significant uncertainty.

4.11.2 Reconciliation of defined benefit obligation and fair value of plan assets	2016 CHF m	2015 CHF m
Defined benefit obligation at January 1	1,341.5	1,283.2
Interest costs	20.6	26.1
Current service costs (employer)	24.1	24.2
Contributions by plan participants	17.9	17.6
Past service costs	0.0	–0.1
Benefits (paid)/deposited	–63.5	–66.3
Business combinations	0.0	9.0
Other effects	0.7	0.6
Actuarial (gain) loss on obligation	54.9	56.6
Currency translation adjustments	–5.1	–9.4
Defined benefit obligation at December 31	**1,391.1**	**1,341.5**
Reconciliation of the fair value of plan assets		
Fair value of plan assets at January 1	1,190.7	1,185.1
Expected return on plan assets	18.1	24.1
Contributions by the employer	28.9	28.8
Contributions by plan participants	17.8	17.6
Benefits (paid)/deposited	–63.5	–66.3
Actuarial gain (loss) on plan assets	53.9	7.1
Currency translation adjustments	–4.2	–5.7
Fair value of plan assets at December 31	**1,241.7**	**1,190.7**
Actual return on plan assets	72.0	31.2

4.11.3 Remeasurements of employee benefits	2016 CHF m	2015 CHF m
Return on plan assets excluding interest income	–53.9	–7.1
Current-year actuarial loss (gain) on benefit obligation:		
→ change in demographic assumptions	–5.3	0.4
→ change in financial assumptions	133.2	66.0
→ experience adjustments	–73.0	–9.9
Change in effect of asset ceiling	0.0	–10.7
Remeasurements recognized in other comprehensive income	**1.0**	**38.7**
Cumulative amount recognized in other comprehensive income	**286.0**	**285.0**

4.11.4 Reconciliation of the amount recognized in the statement of financial position at year-end	2016 CHF m	2015 CHF m
Present value of funded defined benefit obligation	1,391.1	1,341.5
Fair value of plan assets	1,241.7	1,190.7
Deficit/(surplus)	149.4	150.8
Liability (asset) recognized in the statement of financial position	**149.4**	**150.8**
Thereof recognized as separate asset	–6.9	–16.1
Thereof recognized as separate liability	156.3	166.9

4.11.5 Pension expenses recognized in the statement of income	2016 CHF m	2015 CHF m
Current service costs (employer)	24.1	24.4
Net interest employee benefit	2.6	2.0
Past service costs	0.0	–0.1
Other effects	0.7	0.9
Expenses recognized in the statement of income	**27.4**	**27.2**
Thereof service costs and administration costs	24.8	25.0
Thereof net interest on the net defined benefit liability (asset)	2.6	2.2

4.11.6 Best estimate of contributions	2017 CHF m
Contributions by the employer	**28.0**

4.11.7 Plan assets at fair value consist of	2016 CHF m	2015 CHF m
Equity instruments third parties	337.7	301.0
Debt instruments third parties	368.8	358.8
Real estate	369.8	338.0
Cash and cash equivalents	38.8	80.4
Others	126.6	112.5
Total plan assets at fair value	**1,241.7**	**1,190.7**
Thereof quoted	1,241.5	1,111.5
Thereof unquoted	0.2	79.2

4.11.8 Information about the significant plans	2016 Switzerland	2016 Germany	2015 Switzerland	2015 Germany
Discount rate	0.6%	1.3%	1.4%	2.4%
Future salary increases	1.5%	0.0%	1.5%	0.0%
Costs of defined benefit plans	25.1	1.7	25.4	1.4
Remeasurements employee benefits	–13.4	10.0	36.8	1.7

4.11.9 Defined contribution plan	2016 CHF m	2015 CHF m
Expenses for defined contribution plan	**6.3**	**6.1**

4.12 Share capital

As of December 31, 2016, share capital amounted to CHF 15.0 million (prior year: CHF 15.0 million) and consisted of 105,000 (prior year: 105,000) registered shares with nominal value of CHF 100 each and 112,500 (prior year: 112,500) with nominal value of CHF 40 each.

5. Other disclosures

5.1 Contingent liabilities

	2016 CHF m	2015 CHF m
Sureties, guarantees and other obligations	2.0	1.4
Total	**2.0**	**1.4**

5.2 Off-balance sheet obligations under operating leases

	2016 CHF m	2015 CHF m
Leasing obligation up to one year	16.2	16.5
Leasing obligation as of one to five years	19.7	20.4
Leasing obligation over five years	8.7	12.4
Total	**44.6**	**49.3**

This item mainly includes obligations under long-term leasing agreements relating to properties in Germany, Switzerland, and Brazil.

5.3 Assets pledged or assigned to secure own liabilities

In connection with the long-term loan from related parties of CHF 55 million and open legal cases, assets of CHF 45.0 million and CHF 1.4 million respectively (prior year: CHF 45.0 million and CHF 0.9 million) serve as collateral for own liabilities where the right of disposal is limited.

5.4 Related parties

Related-party transactions. A loan towards the shareholders in the amount of CHF 70.0 million (prior year: CHF 70.0 million) is disclosed under other non-current financial assets. Loans from the shareholders of CHF 121.5 million (prior year: CHF 132.2 million) are disclosed under long-term financial liabilities and of CHF 12.4 million under short-term financial liabilities. Other related-party positions are disclosed separately in the notes. Related-party transactions are conducted at arm's length.

Liabilities to pension plans amounted to CHF 0.2 million as per 2016 (prior year: CHF 13.5 million) and are mainly related to a comprehensive restructuring of the Swiss pension fund in 2013. This amount is shown under other short-term liabilities.

Key management compensation. Key management (defined as Group Management and Board of Directors) received a total short-term compensation of CHF 8.2 million (prior year: CHF 6.8 million). In addition, pension and social security contributions of CHF 1.0 million (prior year: CHF 1.0 million) are recorded as expense. The provisions for other long-term benefits amount to CHF 5.6 million (prior year: CHF 3.2 million)

The Bühler Group operates deferred compensation plans for members of the management. The deferred compensation plans comprise a vesting period of three years and an execution period of ten years from the grant date. The amounts are charged to the statement of income over the relevant vesting periods and are adjusted to reflect actual and expected levels of vesting. The value of the deferred compensation is determined annually based on the Group's annual profit for the three preceding years and equity at year-end.

5.5 Government grants

Government grants are offset with the items of expense which they finance. Government grants related to assets are deducted from the assets in deriving the carrying amount of the asset. Like in prior year, the Group received no government grants in 2016. In 2012, the construction of a new die casting factory in China has been subsidized by the government amounting to CHF 5.3 million. This government grant was recorded in 2012 whereas payments of CHF 3.7 million were received in 2013 and balance payment of CHF 1.6 million was received in 2015.

5.6 Proposal of the Board of Directors

At the General Meeting, the Board of Directors proposes a dividend of CHF 18.0 million (prior year: CHF 15.0 million) or CHF 120 (prior year: CHF 100) per registered share with a nominal value of CHF 100 and CHF 48 (prior year: CHF 40) per registered share with a nominal value of CHF 40. The dividend payment to the shareholders of the Bühler Holding AG amounted to CHF 15.0 million in the financial year 2016 (prior year: CHF 15.0 million).

5.7 Release for publication of the consolidated financial statements

The consolidated financial statements were released for publication by the Board of Directors of the Bühler Holding AG on February 7, 2017.

5.8 Subsequent events

No material events have occurred after the balance sheet date.

Report of the statutory auditor on the consolidated financial statements

To the General Meeting of Bühler Holding AG, Uzwil
Zürich, 7 February 2017

As statutory auditor, we have audited the consolidated financial statements of Bühler Holding AG, which comprise the consolidated statement of income, consolidated statement of comprehensive income, consolidated statement of financial position, consolidated statement of changes in equity, consolidated statement of cash flows and notes (pages 127 to 176), for the year ended 31 December 2016.

Board of Directors' responsibility. The Board of Directors is responsible for the preparation of the consolidated financial statements in accordance with the International Financial Reporting Standards (IFRS) and the requirements of Swiss law. This responsibility includes designing, implementing and maintaining an internal control system relevant to the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud or error. The Board of Directors is further responsible for selecting and applying appropriate accounting policies and making accounting estimates that are reasonable in the circumstances.

Auditor's responsibility. Our responsibility is to express an opinion on these consolidated financial statements based on our audit. We conducted our audit in accordance with Swiss law and Swiss Auditing Standards as well as the International Standards on Auditing. Those standards require that we plan and perform the audit to obtain reasonable assurance whether the consolidated financial statements are free from material misstatement.

An audit involves performing procedures to obtain audit evidence about the amounts and disclosures in the consolidated financial statements. The procedures selected depend on the auditor's judgment, including the assessment of the risks of material misstatement of the consolidated financial statements, whether due to fraud or error. In making those risk assessments, the auditor considers the internal control system relevant to the entity's preparation of the consolidated financial statements in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the entity's internal control system. An audit also includes evaluating the appropriateness of accounting policies used and the reasonableness of accounting estimates made, as well as evaluating the overall presentation of the consolidated financial statements. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinion.

Opinion. In our opinion, the consolidated financial statements for the year ended 31 December 2016, give a true and fair view of the financial position, the results of operations and the cash flows in accordance with the International Financial Reporting Standards (IFRS) and comply with Swiss law.

Other Matter. The consolidated financial statements of Bühler Holding AG for the year ended 31 December 2015, were audited by another firm of auditors whose report, dated 9 February 2016, expressed an unmodified opinion on those statements.

Report on other legal requirements

We confirm that we meet the legal requirements on licensing according to the Auditor Oversight Act (AOA) and independence (article 728 CO) and that there are no circumstances incompatible with our independence.

In accordance with article 728a paragraph 1 item 3 CO and Swiss Auditing Standard 890, we confirm that an internal control system exists which has been designed for the preparation of consolidated financial statements according to the instructions of the Board of Directors.

We recommend that the consolidated financial statements submitted to you be approved.

PricewaterhouseCoopers AG

René Rausenberger Audit expert Auditor in charge	Richard Müller Audit expert

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