

Course of Business and Economic Position

Merck Group

Overview of 2016

- Group net sales increase by 17.0% to € 15 billion
- Healthcare and Life Science deliver organic sales growth
- EBITDA pre exceptionals up 23.7% to around € 4.5 billion
- Group profitability (EBITDA margin pre exceptionals) rises to 29.9% (2015: 28.3%)
- Improvement in earnings per share before exceptionals by 27.5% to € 6.21
- Business free cash flow increases 20.0% to € 3.3 billion

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Key figures

€ million	2016	2015	Change	
			€ million	in %
Net sales	15,024	12,845	2,179	17.0%
Operating result (EBIT)	2,481	1,843	637	34.6%
Margin (% of net sales)	16.5%	14.3%		
EBITDA	4,415	3,354	1,061	31.6%
Margin (% of net sales)	29.4%	26.1%		
EBITDA pre exceptionals	4,490	3,630	861	23.7%
Margin (% of net sales)	29.9%	28.3%		
Profit after tax	1,633	1,124	509	45.3%
Earnings per share (€)	3.75	2.56	1.19	46.5%
Earnings per share pre exceptionals (€)	6.21	4.87	1.34	27.5%
Business free cash flow	3,318	2,766	552	20.0%

Development of net sales and results of operations

In 2016, the Merck Group generated net sales of € 15,024 million (2015: € 12,845 million), achieving sales growth of € 2,179 million or 17.0%. This double-digit increase was driven both by very significant portfolio changes and moderate organic growth. Group sales grew organically to € 408 million or 3.2% and were generated by the Healthcare and Life Science business sectors. Portfolio changes increased net sales by € 2,109 million or 16.4%. This was

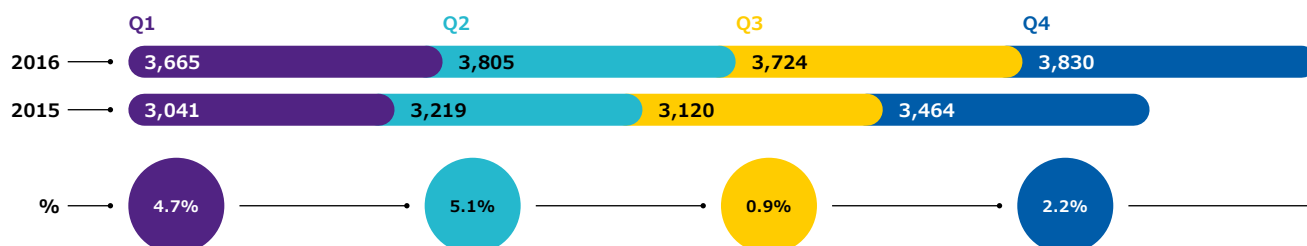
mainly attributable to the acquisition of Sigma-Aldrich, which closed on November 18, 2015 (see Note [4] "Acquisitions, assets held for sale and disposal groups" in the Notes to the Consolidated Financial Statements). Negative exchange rate effects lowered net sales by € -339 million or -2.6%. These effects were primarily due to the development of Latin American currencies. The decline in the value of the British pound also had a slightly adverse effect on sales.

The development of net sales in the individual quarters as well as the respective organic growth rates in 2016 are presented in the following overview:

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Net sales and organic growth by quarter¹

€ million/organic growth in %



¹ Quarterly breakdown unaudited.

The double-digit growth rate of Group sales was attributable to the positive contribution of our Life Science business sector, which increased its sales overall by 68.6% to € 5,658 million (2015: € 3,355 million). This was driven both by the acquisition of Sigma-Aldrich (+63.1%) and the sharp organic increase in sales (+6.3%). Consequently, the share of Group sales attributable to Life Science in 2016 rose significantly by 12 percentage points to 38% (2015: 26%). With a 45% share (2015: 54%) of Group sales, Healthcare remained our strongest business sector in terms of sales. The Healthcare business sector delivered organic growth of 4.6%, which however was more than canceled out by negative exchange rate effects and the absence of Kuvan® sales (see Note [4] "Acquisitions, assets held for sale and disposal groups" in the Notes to the Consolidated Financial Statements). Overall, Healthcare sales declined slightly to € 6,855 million (2015: € 6,934 million). Net sales by the Performance Materials business sector decreased slightly to € 2,511 million (2015: € 2,556 million). The business sector thus generated 17% (2015: 20%) of Group sales.

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Net sales by business sector – 2016

€ million/% of net sales



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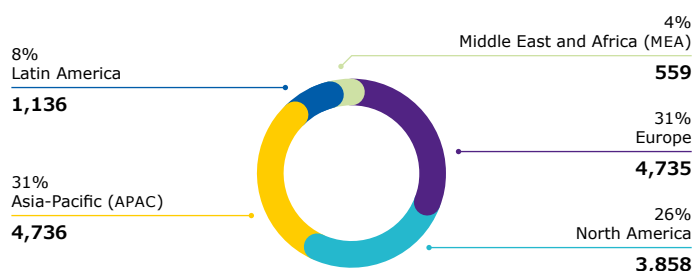
Net sales components by business sector – 2016

€ million/change in %	Net sales	Organic growth	Exchange rate effects	Acquisitions/divestments	Total change
Healthcare	6,855	4.6%	-4.6%	-1.1%	-1.1%
Life Science	5,658	6.3%	-0.8%	63.1%	68.6%
Performance Materials	2,511	-4.7%	0.2%	2.7%	-1.8%
Merck Group	15,024	3.2%	-2.6%	16.4%	17.0%

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Net sales by region – 2016

€ million/% of net sales



Sales generated in Europe grew by 15.4% or € 632 million to € 4,735 million (2015: € 4,103 million). This was due to sales increases primarily in the Life Science business sector, which generated double-digit organic growth and high acquisition-related sales. In 2016, Europe contributed 31% to Group sales (2015: 32%).

With net sales of € 3,858 million (2015: € 2,723 million), North America generated the strongest sales increases in both absolute (+€ 1,135 million) and percentage (+41.7%) terms in 2016. In addition to the effect of the Sigma-Aldrich acquisition (+35.5%), this positive sales development was driven by the organic growth of the Healthcare business sector. The contribution to Group sales

Driven by strong acquisition-related increases from the consolidation of Sigma-Aldrich and supported by slight organic growth, the strong year-earlier level of net sales in the Asia-Pacific region rose by 11.7% or € 495 million to € 4,736 million (2015: € 4,241 million). This positive sales development was fueled by the Healthcare and Life Science business sectors, which achieved high acquisition-related sales increases and very strong organic growth. Consequently, these two business sectors could almost compensate for the weaker Display Materials business of Performance Materials in this region. The contribution to Group sales by the Asia-Pacific region fell by two percentage points to 31% (2015: 33%).

by North America in 2016 was 26%, representing an increase of five percentage points (2015: 21%).

In Latin America, Group sales decreased owing to exchange rate effects to € 1,136 million (2015: € 1,265 million). All business sectors contributed to organic sales growth of 8.9% in this region. The share of sales attributable to Latin America declined by two percentage points to 8% (2015: 10%).

Net sales in the Middle East and Africa region rose by 8.9% in 2016, amounting to € 559 million (2015: € 513 million). Organic sales growth of 5.7%, to which all business sectors contributed, was supported by acquisition-related effects (+5.4%). This region accounted for an unchanged 4% of Group sales.

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Net sales components by region – 2016

€ million/change in %	Net sales	Organic growth	Exchange rate effects	Acquisitions/divestments	Total change
Europe	4,735	1.7%	-1.4%	15.1%	15.4%
North America	3,858	5.3%	0.9%	35.5%	41.7%
Asia-Pacific (APAC)	4,736	1.2%	0.1%	10.4%	11.7%
Latin America	1,136	8.9%	-23.4%	4.2%	-10.2%
Middle East and Africa (MEA)	559	5.7%	-2.1%	5.4%	8.9%
Merck Group	15,024	3.2%	-2.6%	16.4%	17.0%

The consolidated income statement of the Merck Group is as follows:

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Consolidated Income Statement

€ million	2016	in %	2015	in %	Change	
					€ million	in %
Net sales	15,024	100.0%	12,845	100.0%	2,179	17.0%
Cost of sales	-5,201	-34.6%	-4,076	-31.7%	-1,125	27.6%
<i>(of which: amortization of intangible assets)¹</i>	<i>(-181)</i>		<i>(-167)</i>		<i>(-15)</i>	<i>(8.8%)</i>
Gross profit	9,823	65.4%	8,768	68.3%	1,054	12.0%
Marketing and selling expenses	-4,526	-30.1%	-4,050	-31.5%	-477	11.8%
<i>(of which: amortization of intangible assets)¹</i>	<i>(-1,032)</i>		<i>(-779)</i>		<i>(-253)</i>	<i>(32.5%)</i>
Administration expenses	-854	-5.7%	-720	-5.6%	-134	18.7%
Research and development costs	-1,976	-13.2%	-1,709	-13.3%	-266	15.6%
<i>(of which: amortization of intangible assets)¹</i>	<i>(-4)</i>		<i>(-3)</i>		<i>(-2)</i>	<i>(58.6%)</i>
Other operating expenses and income	14	0.1%	-447	-3.5%	461	>100.0%
Operating result (EBIT)	2,481	16.5%	1,843	14.3%	637	34.6%
Financial result	-326	-2.2%	-357	-2.8%	30	-8.5%
Profit before income tax	2,154	14.3%	1,487	11.6%	668	44.9%
Income tax	-521	-3.5%	-368	-2.9%	-153	41.7%
Profit after tax from continuing operations	1,633	10.9%	1,118	8.7%	514	46.0%
Profit after tax from discontinued operations	-	-	6	-	-6	>100.0%
Profit after tax	1,633	10.9%	1,124	8.8%	509	45.3%
Non-controlling interests	-4	-0.0%	-9	-0.1%	5	-55.0%
Net income	1,629	10.8%	1,115	8.7%	514	46.1%

¹ Excluding amortization of internally generated or separately acquired software.

Gross profit of the Merck Group rose by 12.0% to € 9,823 million in 2016 (2015: € 8,768 million). This double-digit rate of increase was mainly driven by the Life Science business sector, which benefited from positive business performance and the acquisition of Sigma-Aldrich. The gross margin of the Group, i.e. gross profit as a percentage of sales, declined to 65.4% (2015: 68.3%).

The increase in marketing and selling expenses as well as administration expenses was primarily due to the consolidation of Sigma-Aldrich. Owing to the termination of the co-promotion agreement with Pfizer for Rebif® in the United States at the end of 2015, marketing and selling expenses for the Healthcare business

sector declined. Nevertheless, Group marketing and selling expenses increased overall due to the acquisition effects in Life Science.

In 2016, Group research and development costs increased by 15.6% to € 1,976 million. This was due mainly to the research activities in the Healthcare business sector and to the acquisition of Sigma-Aldrich. Accounting for 76% of Group R&D spending (2015: 77%), Healthcare is our most research-intensive business sector. At 13.2%, the Group research spending ratio (research and development costs as a percentage of sales) remained at the previous year's level (2015: 13.3%).

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Research and development costs by business sector – 2016

€ million/in %



In 2016, other operating expenses and income (net) showed an income balance of € 14 million; in 2015, an expense balance of € –447 million was reported. This positive development was driven in particular by the gain on the sale of the rights to Kuvan® (€ 330 million) and the divestment of a minority shareholding (€ 30 million) in the Healthcare business sector. Detailed information about the development and composition of other operating expenses and income can be found in Note [11] “Other operating income” and Note [12] “Other operating expenses” in the Notes to the Consolidated Financial Statements.

The operating result (EBIT) of the Merck Group soared by € 637 million or 34.6% year-on-year to € 2,481 million.

In 2016, the negative financial result improved by € 30 million to € –326 million, mainly owing to lower exchange rate losses and a decrease in currency hedging expenses from Group-internal transactions. At € –270 million, the interest result contained in the financial result was on par with the previous year (2015: € –271 million) (see Note [13] “Financial result” in the Notes to the Consolidated Financial Statements).

Income tax expenses of € 521 million (2015: € 368 million) led to an effective tax rate of 24.2% (2015: 24.8%). More information about income taxes can be found in Note [14] “Income taxes” in the Notes to the Consolidated Financial Statements.

Profit after tax of discontinued operations reported in 2015 comprises the business activities of Sigma-Aldrich acquired with a view to resale (see also Note [4] “Acquisitions, assets held for sale and

disposal groups” in the Notes to the Consolidated Financial Statements). Net income, i.e. profit after tax attributable to Merck KGaA shareholders, for 2016 was € 1,629 million (2015: € 1,115 million), resulting in earnings per share of € 3.75 (2015: € 2.56).

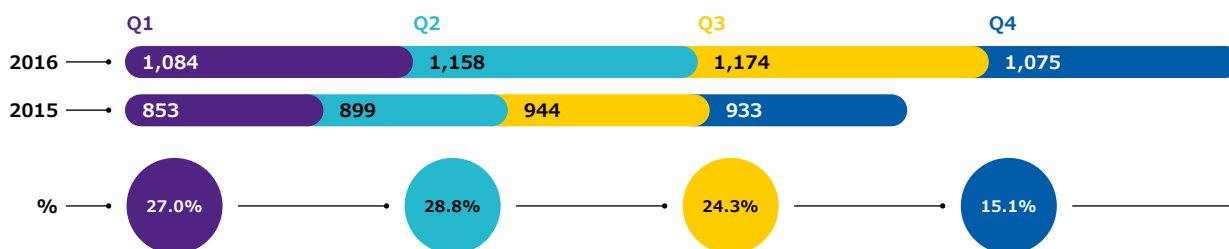
EBITDA pre exceptionals, the key financial indicator used to steer operating business, grew by € 861 million or 23.7% to € 4,490 million (2015: € 3,630 million). The resulting EBITDA margin pre exceptionals thus increased by nearly two percentage points to 29.9% (2015: 28.3%). The reconciliation of the operating result (EBIT) to EBITDA pre exceptionals is presented in the chapter entitled “Internal Management System”.

The development of EBITDA pre exceptionals in the individual quarters in comparison with 2015 as well as the respective growth rates are presented in the following overview:

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EBITDA pre exceptionals and change by quarter¹

€ million/change in %



¹Quarterly breakdown unaudited.

The increase in Group EBITDA pre exceptionals was driven especially by the Life Science business sector, which in 2016 generated an increase of € 796 million or 93.0% to € 1,652 million (2015: € 856 million). Consequently, the share of Group EBITDA pre exceptionals accounted for by Life Science (excluding the € - 396 million decline due to Corporate and Other) rose significantly to 34% (2015: 22%). Yet EBITDA pre exceptionals of the Healthcare business sector also rose by 6.3% to € 2,128 million (2015: € 2,002 million). In 2016, Healthcare generated a 43% share of this Group key indicator, thus remaining Merck's most profitable business sector in absolute terms. EBITDA pre exceptionals of the Performance Materials business sector decreased slightly to € 1,106 million and did not fully reach the high year-earlier level (2015: € 1,132 million). The percentage contribution of Performance Materials to Group EBITDA pre exceptionals declined in 2016 to 23% (2015: 28%).

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EBITDA pre exceptionals by business sector – 2016

€ million/in %



Not presented: Decline in Group EBITDA pre exceptionals by € - 396 million due to Corporate and Other.

Net assets and financial position

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Balance sheet structure

	Dec. 31, 2016		Dec. 31, 2015 ¹		Change	
	€ million	in %	€ million	in %	€ million	in %
Non-current assets	30,582	79.9%	30,737	80.7%	-155	-0.5%
of which:						
Intangible assets	24,989		25,422		-433	
Property, plant and equipment	4,230		4,008		222	
Other non-current assets	1,363		1,308		55	
Current assets	7,670	20.1%	7,344	19.3%	325	4.4%
of which:						
Inventories	2,607		2,610		-3	
Trade accounts receivable	2,889		2,738		151	
Current financial assets	145		227		-82	
Other current assets	1,089		937		152	
Cash and cash equivalents	939		832		107	
Total assets	38,251	100.0%	38,081	100.0%	170	0.4%
Equity	14,050	36.7%	12,855	33.8%	1,195	9.3%
Non-current liabilities	15,115	39.5%	15,842	41.6%	-727	-4.6%
of which:						
Provisions for pensions and other post-employment benefits	2,313		1,836		477	
Other non-current provisions	834		855		-22	
Non-current financial liabilities	8,809		9,616		-807	
Other non-current liabilities	3,159		3,535		-376	
Current liabilities	9,086	23.8%	9,384	24.6%	-298	-3.2%
of which:						
Current provisions	412		536		-124	
Current financial liabilities	3,788		4,097		-309	
Trade accounts payable	2,048		1,921		127	
Other current liabilities	2,838		2,830		8	
Total liabilities and equity	38,251	100.0%	38,081	100.0%	170	0.4%

¹Previous year's figures have been adjusted, see "Acquisitions, assets held for sale and disposal groups" in the Notes to the Consolidated Financial Statements.

The total assets of the Merck Group amounted to € 38,251 million as of December 31, 2016. This represents an increase of € 170 million or 0.4% over December 31, 2015 (€ 38,081 million).

Despite the expansion of the operating businesses, at € 3,486 million working capital remained at the level of 2015.

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Working capital

€ million	Dec. 31, 2016	Dec. 31, 2015 ¹	Change	
			€ million	in %
Trade accounts receivable	2,889	2,738	151	5.5%
Receivables from royalties and licenses	38	11	26	> 100.0%
Inventories	2,607	2,610	-3	-0.1%
Trade accounts payable	-2,048	-1,921	-127	6.6%
Working capital	3,486	3,438	47	1.4%

¹ Previous year's figures have been adjusted, see "Acquisitions, assets held for sale and disposal groups" in the Notes to the Consolidated Financial Statements.

Net financial debt, which rose sharply in 2015 owing to the acquisition of Sigma-Aldrich, was lowered in 2016 by € 1,141 million to € 11,513 million (December 31, 2015: € 12,654 million). The composition and the development of net financial debt were as follows:

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Net financial debt

€ million	Dec. 31, 2016	Dec. 31, 2015	Change	
			€ million	in %
Bonds and commercial paper	9,650	9,851	-201	-2.0%
Bank loans	1,978	3,006	-1,028	-34.2%
Liabilities to related parties	758	578	180	31.1%
Loans from third parties and other financial liabilities	80	89	-10	-10.9%
Liabilities from derivatives (financial transactions)	128	184	-55	-30.2%
Finance lease liabilities	4	5	-1	-25.0%
Financial liabilities	12,597	13,713	-1,116	-8.0%
less				
Cash and cash equivalents	939	832	107	12.8%
Current financial assets	145	227	-82	-36.0%
Net financial debt	11,513	12,654	-1,141	-9.0%

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Reconciliation of net financial debt

€ million	2016	2015
January 1	12,654	559
Currency translation difference	118	-737
Dividend payments to shareholders and to E. Merck ¹	600	568
Acquisitions ¹	156	13,482
Assumption of financial liabilities from Sigma-Aldrich	-	425
Payment from the disposal of assets held for sale and from other divestments ¹	-366	-86
Free cash flow	-1,693	-1,539
Other	44	-19
December 31	11,513	12,654

¹According to the consolidated cash flow statement.

The strong increase in pension provisions to € 2,313 million (December 31, 2015: € 1,836 million) was mainly attributable to the required reduction in the discount rate when calculating the present value of the defined benefit obligations. The resulting actuarial losses were recognized in the Consolidated Statement of Comprehensive Income and, taking into account deferred taxes, lowered the equity of the Merck Group as of December 31, 2016. In addition, dividend payments and the profit transfer to E. Merck KG caused equity to decline. These equity-lowering effects were more than offset by the profit after tax amounting to € 1,633 million and the development of currency translation differences from the translation of assets held in foreign currencies into euro, the reporting

currency. Consequently, equity increased in 2016 by € 1,195 million to € 14,050 million (December 31, 2015: € 12,855 million) (see "Consolidated Statement of Comprehensive Income" and "Consolidated Statement of Changes in Net Equity" in the Consolidated Financial Statements). Thanks to the sharp increase in equity, the equity ratio rose by nearly three percentage points, amounting to 36.7% as of December 31, 2016 (December 31, 2015: 33.8%).

Driven by the positive development of net cash flows from operating activities, free cash flow rose by 10.0% over 2015 to € 1,693 million, despite strong investment activity. The composition as well as the development of the relevant items are presented in the following table:

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Free cash flow

€ million	2016	2015	Change	
			€ million	in %
Cash flow from operating activities according to the cash flow statement	2,518	2,195	323	14.7%
Payments for investments in intangible assets	-132	-179	47	-26.3%
Payments from the disposal of intangible assets	2	27	-26	-93.4%
Payments for investments in property, plant and equipment	-716	-514	-202	39.3%
Payments from the disposal of property, plant and equipment	21	9	12	>100.0%
Free cash flow	1,693	1,539	155	10.0%

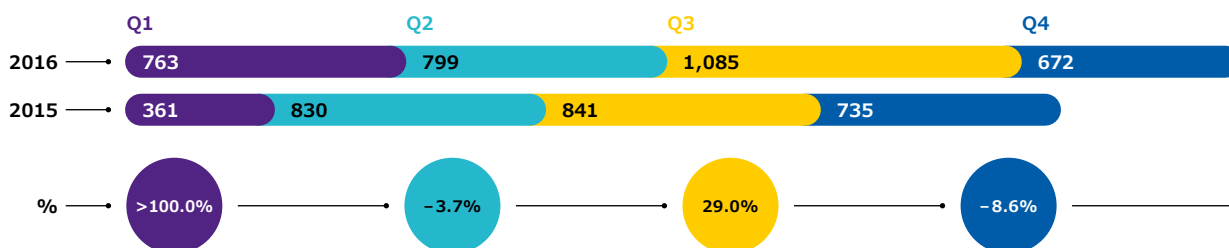
Business free cash flow of the Merck Group rose in 2016 by 20.0% to € 3,318 million (2015: € 2,766 million). This was mainly driven by the positive development of EBITDA pre exceptionals. The composition of this financial indicator is presented in the Group management report under "Internal Management System".

The distribution of business free cash flow across the individual quarters and the percentage changes in comparison with 2015 were as follows:

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Business free cash flow and change by quarter¹

€ million/change in %



¹ Quarterly breakdown unaudited.

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Business free cash flow by business sector – 2016

€ million/in %



Not presented: Decline in Group business free cash flow by € -485 million due to Corporate and Other.

All the business sectors contributed to the increase in Group business free cash flow in 2016. Healthcare generated business free cash flow of € 1,648 million (2015: € 1,581 million). Consequently, with a 43% share (2015: 50%) of Group business free cash flow (excluding the decline of € -485 million due to Corporate and Other) Healthcare was once again the business sector with the highest cash flows. In 2016, the Life Science business sector achieved a 69.3% increase in business free cash flow to € 1,144 million (2015: € 676 million), thus also increasing its share of Group business free cash flow to 30% (2015: 21%). Performance Materials contributed € 1,011 million (2015: € 931 million) to this Group financial indicator, equivalent to 27% (2015: 29%).

The investments in property, plant, equipment and software included in the calculation of business free cash flow as well as advance payments for intangible assets increased in 2016 by 41.1% to a total of € 859 million (2015: € 609 million). The investments in property, plant and equipment included therein amounted to € 722 million in 2016 (2015: € 564 million), € 332 million of which was attributable to strategic investment projects each with a project volume of more than € 2 million; the remainder was attributable to smaller capital spending projects.

In 2016, strategic investments of € 110 million were made to expand the Darmstadt site. Of this amount, € 39 million was used to upgrade global headquarters; the projects include an Innovation Center, a Visitor Center and an employee cafeteria, among other things. Moreover, OLED production capacity in the Performance Materials business sector was expanded with an investment of € 14

million in order to meet growing market demand. In the Healthcare business sector, investments included € 21 million in a new laboratory building for pharmaceutical research and € 10 million in a new packaging center.

Globally, the Healthcare business sector made significant strategic investments in a production facility in Nantong, China (€ 39 million), a new packaging plant at the Aubonne site in Switzerland (€ 16 million), an expansion of the existing filling plant at the Bari site in Italy (€ 11 million), and a new production unit for the Allergopharma business in Reinbek, Germany (€ 10 million).

In 2016, the outlooks for our long-term credit ratings were upgraded by the two rating agencies Moody's and Standard & Poor's. Merck currently has a rating of "A" with a stable outlook (2015: "A" with a negative outlook) from Standard & Poor's and a "Baa1" rating with a stable outlook (2015: "Baa1" with a negative

outlook) from Moody's. In 2016, the rating agency Scope began covering our credit rating and issued Merck an "A-" rating with a stable outlook. An overview of the development of our rating in recent years is presented in the Report on Risks and Opportunities.

The development of key balance sheet figures is as follows:

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Key balance sheet figures

in %		Dec. 31, 2016	Dec. 31, 2015 ¹	Dec. 31, 2014	Dec. 31, 2013	Dec. 31, 2012
Equity ratio	Equity	36.7%	33.8%	45.4%	53.2%	48.1%
	Total assets					
Asset ratio	Non-current assets	79.9%	80.7%	59.7%	64.5%	69.4%
	Total assets					
Asset coverage	Equity	45.9%	41.8%	76.0%	82.4%	69.4%
	Non-current assets					
Finance structure	Current liabilities	37.5%	37.2%	46.5%	40.0%	40.6%
	Liabilities (total)					

¹Previous year's figures have been adjusted, see "Acquisitions, assets held for sale and disposal groups" in the Notes to the Consolidated Financial Statements.

Overall assessment of business performance and economic situation

For Merck, 2016 was another very successful year. The very good performance of operating business confirms our strategy. Despite growing global uncertainties, we reached or exceeded the objectives we had set for 2016. Group net sales showed profitable growth, reaching a new record level of € 15,024 million (2015: € 12,845 million). This was the outcome of both the company's own strengths and acquisitions. EBITDA pre exceptionals rose by 23.7% to € 4,490 million (2015: € 3,630 million), growing even more strongly than net sales, which increased in 2016 by 17.0%. Thanks to internal financing strength, we succeeded in lowering net financial debt from the Sigma-Aldrich acquisition by € 1,141 million.

Our three business sectors made significant progress in 2016. Healthcare advanced its pharmaceutical pipeline and achieved important milestones towards the market launch of new medicines. In 2016, Life Science generated a strong organic sales increase of 6.3%, thus growing faster than the market. The business sector was very successful in realizing the synergies from the Sigma-Aldrich integration in 2016. We made better progress than originally expected both in leveraging cost synergies and in realizing sales synergies. The Performance Materials business sector again

demonstrated its sound earnings resilience in 2016. Future-oriented investments further boosted the innovative strength of this business sector. Among other things, an OLED materials production unit was commissioned in Darmstadt in 2016. In addition, Performance Materials sustainably secured its market leadership in Display Materials.

Our solid accounting and finance policy is reflected by the very good key balance sheet figures. The equity ratio, which improved to 36.7% as of December 31, 2016, is at a very good level. The rapid reduction of net financial debt, which rose massively in 2015 owing to the acquisition of Sigma-Aldrich, remains a key priority. This is also reflected by the improved assessments of the two rating agencies Standard & Poor's ("A" with a stable outlook; 2015: "A" with a negative outlook) and Moody's ("Baa1" with a stable outlook; 2015: "Baa1" with a negative outlook). In 2016, the rating agency Scope began covering the Group's credit rating and issued Merck an "A-" rating with a stable outlook.

Against the backdrop of the solid net assets and financial position as well as the earnings strength of the businesses, we assess the economic position of the Merck Group very positively. The excellent condition Merck is in offers a superb foundation for the achievement of further sustainable and profitable growth.