

Course of Business and Economic Position

Group

Overview of 2021

- Group net sales up € 2.2 billion or 12.3% to € 19.7 billion (2020: € 17.5 billion)
- Organic sales growth of 13.8%; negative foreign exchange effects of -1.4%
- Group EBITDA pre improves by 17.3% to € 6.1 billion (2020: € 5.2 billion); prior-year figure includes income of € 365 million from the release of a provision for potential compensation payments
- EBITDA pre margin rises to 31.0% (2020: 29.7%)
- Earnings per share pre increases by 30.1% to € 8.72 (2020: € 6.70)
- Operating cash flow of the Group amounts to € 4.6 billion (2020: € 3.5 billion)
- Reduction in net financial debt of 18.6% to € 8.8 billion (December 31, 2020: € 10.8 billion)

Group

Key figures

| € million | 2021 | 2020 | Change | |
|-----------------------------------------|--------|--------|-----------|-------|
| | | | € million | % |
| Net sales | 19,687 | 17,534 | 2,152 | 12.3% |
| Operating result (EBIT) ¹ | 4,179 | 2,985 | 1,194 | 40.0% |
| Margin (% of net sales) ¹ | 21.2% | 17.0% | | |
| EBITDA ² | 5,946 | 4,923 | 1,023 | 20.8% |
| Margin (% of net sales) ¹ | 30.2% | 28.1% | | |
| EBITDA pre ¹ | 6,103 | 5,201 | 901 | 17.3% |
| Margin (% of net sales) ¹ | 31.0% | 29.7% | | |
| Profit after tax | 3,065 | 1,994 | 1,071 | 53.7% |
| Earnings per share (€) | 7.03 | 4.57 | 2.46 | 53.8% |
| Earnings per share pre (€) ¹ | 8.72 | 6.70 | 2.02 | 30.1% |
| Operating cash flow | 4,616 | 3,477 | 1,138 | 32.7% |

¹ Not defined by International Financial Reporting Standards (IFRS).

² Not defined by International Financial Reporting Standards (IFRS); EBITDA corresponds to operating result (EBIT) adjusted by depreciation, amortization, impairment losses, and reversals of impairment losses.

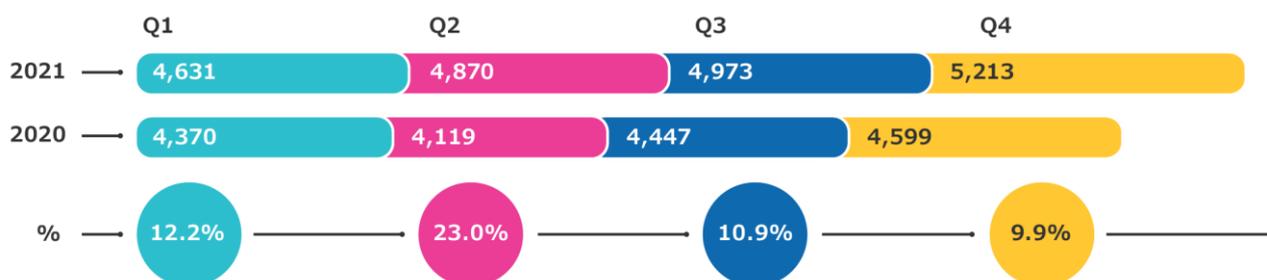
Development of sales and results of operations

In fiscal 2021, the Group generated net sales of € 19,687 million (2020: € 17,534 million), representing a year-on-year increase of € 2,152 million or 12.3%. This positive development was attributable to an organic net sales growth, which totaled € 2,421 million or 13.8% in fiscal 2021. This organic growth was driven by all of the Group's business sectors. At 21.3%, Life Science was by far the business sector with the highest organic sales growth. Exchange rate effects negatively impacted net sales in the amount of € -248 million or -1.4% in fiscal 2021. This was due in particular to the development of the U.S. dollar.

The net sales in the individual quarters as well as the respective organic growth rates in 2021 are presented in the following graph:

Group

Net sales and organic growth¹ by quarter²
€ million/organic growth in%



¹ Not defined by International Financial Reporting Standards (IFRS).

² Quarterly breakdown unaudited.

The Life Science business sector recorded organic net sales growth of € 1,597 million year-on-year to € 8,990 million (2020: € 7,515 million). Including negative foreign exchange effects of -1.6%, net sales increased by 19.6% overall. Accounting for 46% of Group sales (2020: 43%), Life Science was the strongest business sector in terms of net sales. The Healthcare business sector recorded net sales growth of 6.8% to € 7,089 million in fiscal 2021 (2020: € 6,639 million). Organic sales growth of 8.5% was offset by negative foreign exchange effects amounting to -1.4%. Accordingly, the share of Group sales attributable to Healthcare fell by 2 percentage points to 36% (2020: 38%). The 6.7% increase in net sales in the Electronics business segment to € 3,608 million (2020: € 3,380 million) comprised organic growth of 7.7% and negative foreign exchange effects of -0.9%. The share of the Group's net sales attributable to Electronics declined slightly to 18% (2020: 19%).

Group

Net sales by business sector - 2021

€ million/% of net sales



Group

Net sales by business sector

| € million | 2021 | Share | Organic growth ¹ | Exchange rate effects | Acquisitions/divestments | Total change | 2020 | Share |
|--------------|---------------|-------------|-----------------------------|-----------------------|--------------------------|--------------|---------------|-------------|
| Life Science | 8,990 | 46% | 21.3% | -1.6% | - | 19.6% | 7,515 | 43% |
| Healthcare | 7,089 | 36% | 8.5% | -1.4% | -0.3% | 6.8% | 6,639 | 38% |
| Electronics | 3,608 | 18% | 7.7% | -0.9% | - | 6.7% | 3,380 | 19% |
| Group | 19,687 | 100% | 13.8% | -1.4% | -0.1% | 12.3% | 17,534 | 100% |

¹ Not defined by International Financial Reporting Standards (IFRS).

In fiscal 2021, the Group recorded the following regional sales performance:

Group

Net sales by region

| € million | 2021 | Share | Organic growth ¹ | Exchange rate effects | Acquisitions/divestments | Total change | 2020 | Share |
|------------------------------|---------------|-------------|-----------------------------|-----------------------|--------------------------|--------------|---------------|-------------|
| Europe | 5,675 | 29% | 14.5% | -0.5% | -0.3% | 13.7% | 4,991 | 29% |
| North America | 5,397 | 27% | 17.7% | -3.8% | - | 13.9% | 4,739 | 27% |
| Asia-Pacific (APAC) | 7,020 | 36% | 11.3% | - | -0.1% | 11.2% | 6,313 | 36% |
| Latin America | 990 | 5% | 12.9% | -4.2% | - | 8.8% | 910 | 5% |
| Middle East and Africa (MEA) | 605 | 3% | 5.1% | -1.0% | - | 4.1% | 581 | 3% |
| Group | 19,687 | 100% | 13.8% | -1.4% | -0.1% | 12.3% | 17,534 | 100% |

¹ Not defined by International Financial Reporting Standards (IFRS).

The Consolidated Income Statement of the Group is as follows:

Group

Consolidated Income Statement

| € million | 2021 | % | 2020 | % | Change | |
|--------------------------------------------------------------------------------|---------------|---------------|---------------|---------------|--------------|--------------|
| | | | | | € million | % |
| Net sales | 19,687 | 100.0% | 17,534 | 100.0% | 2,152 | 12.3% |
| Cost of sales | -7,351 | -37.3% | -6,835 | -39.0% | -516 | 7.6% |
| Gross profit | 12,335 | 62.7% | 10,699 | 61.0% | 1,636 | 15.3% |
| Marketing and selling expenses | -4,304 | -21.9% | -4,207 | -24.0% | -97 | 2.3% |
| Administration expenses | -1,241 | -6.3% | -1,188 | -6.8% | -53 | 4.5% |
| Research and development costs | -2,408 | -12.2% | -2,288 | -13.0% | -119 | 5.2% |
| Impairment losses and reversals of impairment losses on financial assets (net) | 1 | 0.0% | -6 | 0.0% | 7 | >100.0% |
| Other operating income and expenses | -206 | -1.0% | -25 | -0.1% | -180 | >100.0% |
| Operating result (EBIT)¹ | 4,179 | 21.2% | 2,985 | 17.0% | 1,194 | 40.0% |
| Financial result | -255 | -1.3% | -354 | -2.0% | 100 | -28.1% |
| Profit before income tax | 3,924 | 19.9% | 2,630 | 15.0% | 1,293 | 49.2% |
| Income tax | -859 | -4.4% | -637 | -3.6% | -222 | 34.9% |
| Profit after tax | 3,065 | 15.6% | 1,994 | 11.4% | 1,071 | 53.7% |
| Non-controlling interests | -10 | -0.1% | -7 | 0.0% | -4 | 58.5% |
| Net income | 3,055 | 15.5% | 1,987 | 11.3% | 1,067 | 53.7% |

¹ Not defined by International Financial Reporting Standards (IFRS).

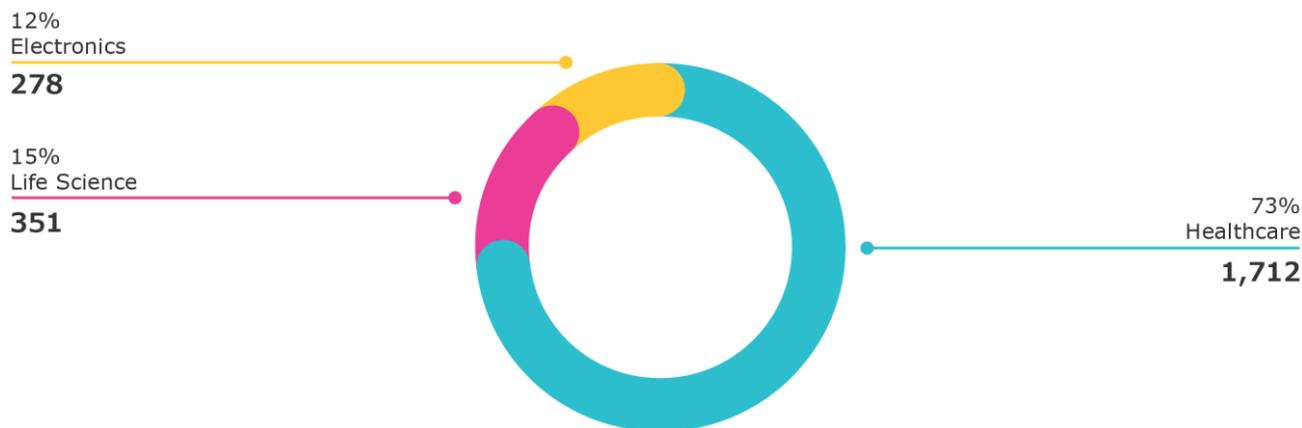
The positive business performance in fiscal 2021 led to an increase of 15.3% in the Group's gross profit to € 12,335 million (2020: € 10,699 million). The resulting gross margin of the Group, i.e. gross profit as a percentage of net sales, improved by 1.7 percentage points year-on-year to 62.7% (2020: 61.0%).

Group-wide research and development costs rose by 5.2% to € 2,408 million in the year under review (2020: € 2,288 million) and led to a research spending ratio (research and development costs as a percentage of net sales) of 12.2% (2020: 13.0%). Accounting for 73% (2020: 74%) of Group R&D spending, Healthcare remained the most research-intensive business sector of the Group. Further information can be found in chapter „Research and Development“.

Group

Research and development costs by business sector¹ - 2021

€ million/%



¹ Not presented: research and development costs of € 67 million allocated to Corporate and Other.

The expense balance of other operating expenses and income rose to € -206 million in fiscal 2021 (2020: € -25 million). This substantial change was primarily due to the income from the release of a provision of € 365 million for potential damages in the Healthcare business sector in the previous year. Detailed information about the development and composition of other operating expenses and income can be found in Note (13) "[Other operating income](#)" and Note (14) "[Other operating expenses](#)" in the Notes to the Consolidated Financial Statements.

An increase in provisions for obligations under long-term variable compensation programs (Long-Term Incentive Plan of Merck KGaA, Darmstadt, Germany) had an adverse effect on the operating result in the year under review, with the rise in the intrinsic value of the Share Units of Merck KGaA, Darmstadt, Germany (MSUs) being reflected in the respective functional costs depending on the area of activity of the plan beneficiaries.

The financial result improved by 28.1% to € -255 million in fiscal 2021 (2020: € -354 million). This positive development was primarily due to lower interest expenses. Details about the Group's financial income and expenses can be found in Note (40) "[Finance income and expenses/Net gains and losses from financial instruments](#)" in the Notes to the Consolidated Financial Statements.

Income tax expense amounted to € 859 million in 2021 (2020: € 637 million) and resulted in a tax rate of 21.9% (2020: 24.2%). Further information on income taxes can be found in Note (15) "[Income tax](#)" in the Notes to the Consolidated Financial Statements.

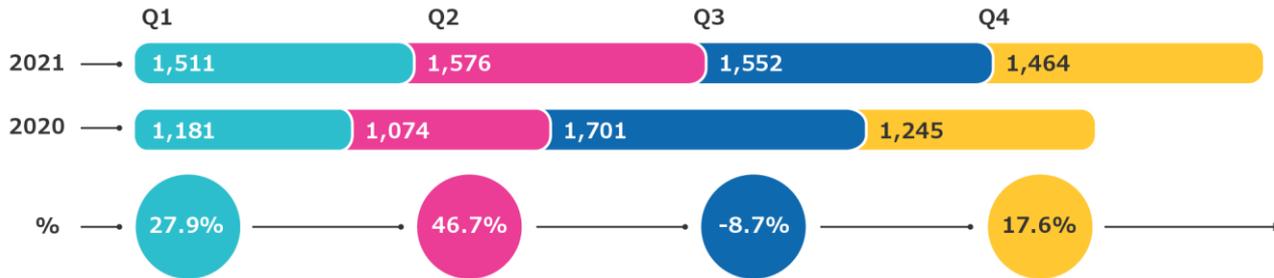
The net income attributable to Merck KGaA, Darmstadt, Germany, shareholders increased by 53.7% to € 3,055 million (2020: € 1,987 million) and resulted in an improvement in earnings per share to € 7.03 in fiscal 2021 (2020: € 4.57).

EBITDA pre, the key financial indicator used to steer operating business, rose by € 901 million or 17.3% to € 6,103 million (2020: € 5,201 million). Organic earnings growth amounted to 18.1%. It should be noted that the prior-year figure included income from the release of a provision for potential damages (€ 365 million). Foreign exchange effects (-0.6%) and portfolio effects (-0.1%) had an insignificant impact on the development of EBITDA pre in the year under review. The EBITDA pre margin of the Group (EBITDA pre as a percentage of net sales) improved to 31.0% (2020: 29.7%). The reconciliation of the operating result (EBIT) to EBITDA pre is presented in the "Internal Management System" chapter.

The development of EBITDA pre in the individual quarters in comparison with 2020 as well as the respective growth rates are presented in the following overview:

Group

EBITDA pre¹ and change by quarter²
€ million/change in%



¹ Not defined by International Financial Reporting Standards (IFRS).
² Quarterly breakdown unaudited.

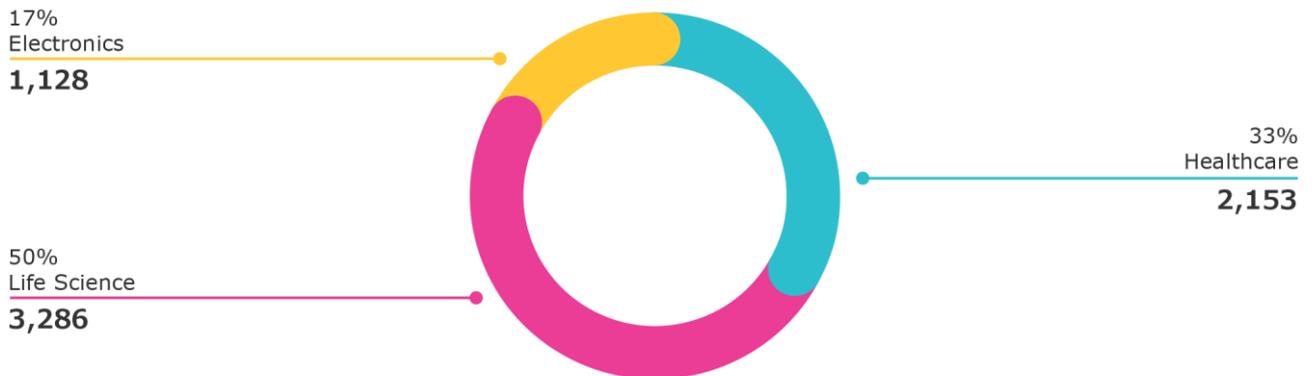
The biggest contribution to the growth in Group EBITDA pre came from the Life Science business sector, which generated EBITDA pre of € 3,286 million, up 36.6% on the previous year (2020: € 2,405 million). This meant the EBITDA pre margin in Life Science increased to 36.6% in fiscal 2021 (2020: 32.0%). The share of Group EBITDA pre attributable to the Life Science business sector (not taking into account the € -465 million reduction due to Corporate and Other) rose to 50% (2020: 42%).

EBITDA pre in the Healthcare business sector declined by -5.0% to € 2,153 million (2020: € 2,267 million). Accordingly, the EBITDA pre margin fell to 30.4% in fiscal 2021 (2020: 34.1%). It should be noted that the prior-year figure for the business sector included income from the release of a provision for potential damages (€ 365 million). The share of Group EBITDA pre attributable to the Healthcare business sector declined to 33% (2020: 40%).

The Electronics business sector increased its EBITDA pre by 10.2% to € 1,128 million in fiscal 2021 (2020: € 1,024 million). The share of Group EBITDA pre attributable to the Electronics business sector amounted to 17% in the year under review (2020: 18%). The EBITDA pre margin rose by one percentage point to 31.3% (2020: 30.3%).

Group

EBITDA pre¹ by business sector² - 2021
€ million/%



¹ Not defined by International Financial Reporting Standards (IFRS).
² Not presented: Decline in Group EBITDA pre by €-465 million due to Corporate and Other.

Net assets and financial position

Group

Balance sheet structure

| | Dec. 31, 2021 | | Dec. 31, 2020 | | Change | |
|------------------------------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| | € million | % | € million | % | € million | % |
| Non-current assets | 34,380 | 75.8% | 32,516 | 77.8% | 1,864 | 5.7% |
| thereof: | | | | | | |
| Goodwill | 17,004 | | 15,959 | | 1,046 | |
| Other intangible assets | 7,612 | | 7,653 | | -41 | |
| Property, plant and equipment | 7,217 | | 6,421 | | 796 | |
| Other non-current assets | 2,546 | | 2,483 | | 63 | |
| Current assets | 10,982 | 24.2% | 9,280 | 22.2% | 1,702 | 18.3% |
| thereof: | | | | | | |
| Inventories | 3,900 | | 3,294 | | 607 | |
| Trade and other current receivables | 3,646 | | 3,221 | | 425 | |
| Other current financial assets | 174 | | 125 | | 49 | |
| Other current assets | 1,362 | | 1,286 | | 76 | |
| Cash and cash equivalents | 1,899 | | 1,355 | | 544 | |
| Total assets | 45,362 | 100.0% | 41,796 | 100.0% | 3,566 | 8.5% |
| Equity | 21,416 | 47.2% | 17,017 | 40.7% | 4,399 | 25.9% |
| Non-current liabilities | 13,515 | 29.8% | 15,548 | 37.2% | -2,034 | -13.1% |
| thereof: | | | | | | |
| Non-current provisions for employee benefits | 3,402 | | 3,880 | | -478 | |
| Other non-current provisions | 269 | | 281 | | -11 | |
| Non-current financial debt | 8,270 | | 9,785 | | -1,515 | |
| Other non-current liabilities | 1,574 | | 1,603 | | -29 | |
| Current liabilities | 10,432 | 23.0% | 9,231 | 22.1% | 1,201 | 13.0% |
| thereof: | | | | | | |
| Current provisions | 601 | | 613 | | -12 | |
| Current financial debt | 2,531 | | 2,357 | | 174 | |
| Trade and other current payables/ refund liabilities | 3,219 | | 2,434 | | 785 | |
| Other current liabilities | 4,081 | | 3,828 | | 253 | |
| Total equity and liabilities | 45,362 | 100.0% | 41,796 | 100.0% | 3,566 | 8.5% |

The total assets of the Group amounted to € 45,362 million as of December 31, 2021 (December 31, 2020: € 41,796 million), representing an increase of 8.5% or € 3,566 million in fiscal 2021. This development was due to the impact of the successful course of business as well as exchange rate changes, particularly the stronger US dollar at the reporting date.

The year-on-year increase in property, plant and equipment was attributable to additions of € 1,443 million (2020: € 1,530 million), which significantly exceeded depreciation and disposals in the reporting period. The previous year's figure includes the payment of € 208 million for the acquisition of the previously leased land and buildings of the Life Science site in Burlington, Massachusetts (USA). Of the additions to property, plant and equipment in 2021, € 198 million (2020: € 168 million) related to strategic investments in Germany, including € 151 million for the expansion of the Darmstadt site. Among other things, the Life Science business sector invested € 46 million in a new membrane production plant and € 43 million in a new filling and logistics center in Schnelldorf. Outside Germany, high levels of strategic investments were recorded in the United States (€ 203 million) and Switzerland (€ 159 million) in particular. The United States saw a Healthcare investment of € 19 million in the expansion of the research and development center in Billerica and Life Science investments of € 38 million in a new manufacturing facility for gene therapy products in Carlsbad and € 32 million in the expansion of the production facility for high-potent ingredients in Madison-Verona. In Switzerland, the Healthcare business sector invested € 86 million in a new development center to produce biotechnological products and € 31 million in a new production building for bottling these products.

In fiscal 2021, the equity of the Group rose by 25.9% to € 21,416 million (December 31, 2020: € 17,017 million). This was primarily due to the profit after tax generated (€ 3.1 billion), positive currency translation effects (€ 1.7 billion) and actuarial gains on provisions for pensions (€ 0.6 billion). The dividend payments and profit distribution in the reporting year (€ 0.8 billion) served to reduce equity (see "Consolidated Statement of Changes in Net Equity" in the Consolidated Financial Statements). The equity ratio improved by more than six percentage points to 47.2% (December 31, 2020: 40.7%).

The composition and the development of net financial debt were as follows:

Group

Net financial debt¹

| € million | Dec. 31, 2021 | Dec. 31, 2020 | Change | |
|-------------------------------------------------------|---------------|---------------|---------------|---------------|
| | | | € million | % |
| Bonds and commercial paper | 9,320 | 9,642 | -322 | -3.3% |
| Bank loans | 36 | 1,085 | -1,050 | -96.7% |
| Liabilities to related parties | 896 | 817 | 79 | 9.7% |
| Loans from third parties and other financial debt | 56 | 58 | -2 | -3.3% |
| Liabilities from derivatives (financial transactions) | 35 | 102 | -67 | -66.0% |
| Lease liabilities | 459 | 438 | 21 | 4.7% |
| Financial debt | 10,801 | 12,142 | -1,340 | -11.0% |
| less: | | | | |
| Cash and cash equivalents | 1,899 | 1,355 | 544 | 40.1% |
| Other current financial assets ² | 149 | 28 | 120 | >100.0% |
| Net financial debt¹ | 8,753 | 10,758 | -2,005 | -18.6% |

¹ Not defined by International Financial Reporting Standards (IFRS).

² Excluding current derivatives (operational).

Group

Reconciliation of net financial debt¹

| € million | 2021 | 2020 |
|------------------------------------------------------------------------------|---------------|---------------|
| January 1 | 10,758 | 12,363 |
| Operating Cash Flow | -4,616 | -3,477 |
| Payments for investments in intangible assets ² | 355 | 150 |
| Payments from the disposal of intangible assets ² | -39 | -88 |
| Payments for investments in property, plant and equipment ² | 1,066 | 1,413 |
| Payments from the disposal of property, plant and equipment ² | -7 | -35 |
| Acquisitions ² | 4 | 11 |
| Payments for/proceeds from the disposal of assets held for sale ² | -1 | -48 |
| Change in lease liabilities | 151 | 65 |
| Dividend payments/profit withdrawals ² | 757 | 687 |
| Currency translation difference | 203 | -189 |
| Other | 122 | -93 |
| December 31 | 8,753 | 10,758 |

¹ Not defined by International Financial Reporting Standards (IFRS).

² As reported in the Consolidated Cash Flow Statement.

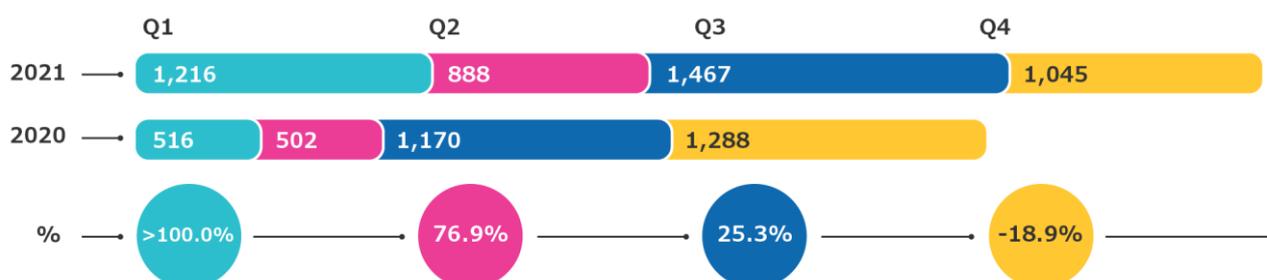
With effect from fiscal 2021, operating cash flow replaces business free cash flow as one of the three most important key performance indicators alongside net sales and EBITDA pre. The composition of operating cash flow is presented in the "Internal Management System" chapter.

In fiscal 2021, operating cash flow increased by 32.7% to € 4,616 million (2020: € 3,477 million). This strong performance was due in particular to the substantial growth in EBITDA pre. The distribution of operating cash flow across the individual quarters and the percentage changes in comparison with 2020 were as follows:

Group

Operating cash flow¹ and change by quarter²

€ million/change in%



¹ Not defined by International Financial Reporting Standards (IFRS).

² Quarterly breakdown unaudited.

The capital market uses the assessments published by rating agencies to help lenders assess the risks of a financial instrument used by our company. We are currently rated by Standard & Poor's, Moody's, and Scope. Standard & Poor's has issued a long-term credit rating of A with a stable outlook, Moody's a rating of A3 with a stable outlook, and Scope a rating of A- with a positive 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 was as follows:

Group

Key balance sheet figures

| % | | Dec. 31, 2021 | Dec. 31, 2020 | Dec. 31, 2019 | Dec. 31, 2018 | Dec. 31, 2017 |
|--------------------------------|---------------------|---------------|---------------|---------------|---------------|---------------|
| Equity ratio ¹ | Total equity | 47.2% | 40.7% | 40.9% | 46.7% | 39.5% |
| | Total assets | | | | | |
| Asset ratio ¹ | Non-current assets | 75.8% | 77.8% | 79.4% | 75.0% | 79.1% |
| | Total assets | | | | | |
| Asset coverage ¹ | Total equity | 62.3% | 52.3% | 51.5% | 62.3% | 49.9% |
| | Non-current assets | | | | | |
| Finance structure ¹ | Current liabilities | 43.6% | 37.3% | 45.7% | 43.3% | 40.1% |
| | Liabilities (total) | | | | | |

¹ Not defined by International Financial Reporting Standards (IFRS).

Overall assessment of business performance and economic situation

Despite the ongoing pandemic and the resulting challenges, the Group can look back in a highly successful fiscal 2021. Needless to say, the safety of our teams around the world remained our top priority, and we averted major disruptions to our supply chains and business operations.

We reached or even exceeded the financial targets we had set ourselves for fiscal 2021. All three business sectors achieved excellent results. With particularly good performance, the “Big 3”¹ – the Process Solutions business within Life Science, new products from the Healthcare research pipeline, and the Semiconductor Solutions business within the Electronics business sector – representing the most important growth drivers of the Group. In fiscal 2021, the Group increased its net sales by 12.3% or € 2.2 billion to € 19.7 billion. Organic sales growth amounted to 13.8% or € 2.4 billion. EBITDA pre, the most important financial indicator for steering our operating business, rose by 17.3% to € 6.1 billion. Net financial debt was reduced by € 2.0 billion to € 8.8 billion thanks to the strong growth in the operating cash flow, which increased by 32.7% or € 1.1 billion to € 4.6 billion in fiscal 2021. Consequently, we will propose to the Annual General Meeting the payment of a dividend of € 1.85 per share for fiscal 2021 – an increase of 32% on the previous year.

The extremely positive business development and solid financing policies of the Group are reflected in its consistently good key balance sheet figures. The equity ratio was an impressive 47.2% as of December 31, 2021 (December 31, 2020: 40.7%). So that we can continue to achieve a rapid reduction in net financial debt, we are focusing on generating organic sales and earnings growth and on high inflows of financial resources from operating business activities.

The reduction in net financial debt also means the Group has significantly greater financial flexibility once again. This will enable us to increase our total investments for the period from 2021 to 2025 by more than 50% compared with the period from 2016 to 2020.

Based on our solid net assets and financial position, and our profitable operations, we view the economic situation of the Group as positive overall.

¹ As of April 1, 2022, the Big 3 include the following businesses: Process Solutions & Life Science Services in Life Science, new Healthcare products and Semiconductor Solutions in Electronics