# Course of Business and Economic Position

## Group

### Group

**Key figures**

| € million | 2023 | 2022 | Change € million | Change % |
|---|---|---|---|---|
| Net sales | 20,993 | 22,232 | -1,239 | -5.6% |
| Operating result (EBIT)[1] | 3,609 | 4,474 | -865 | -19.3% |
| Margin (% of net sales)[1] | 17.2% | 20.1% | | |
| EBITDA[2] | 5,489 | 6,504 | -1,015 | -15.6% |
| Margin (% of net sales)[1] | 26.1% | 29.3% | | |
| EBITDA pre[1] | 5,879 | 6,849 | -970 | -14.2% |
| Margin (% of net sales)[1] | 28.0% | 30.8% | | |
| Profit after tax | 2,834 | 3,339 | -505 | -15.1% |
| Earnings per share (€) | 6.49 | 7.65 | -1.16 | -15.2% |
| Earnings per share pre (€)[1] | 8.49 | 10.05 | -1.56 | -15.5% |
| Operating cash flow | 3,784 | 4,259 | -475 | -11.2% |

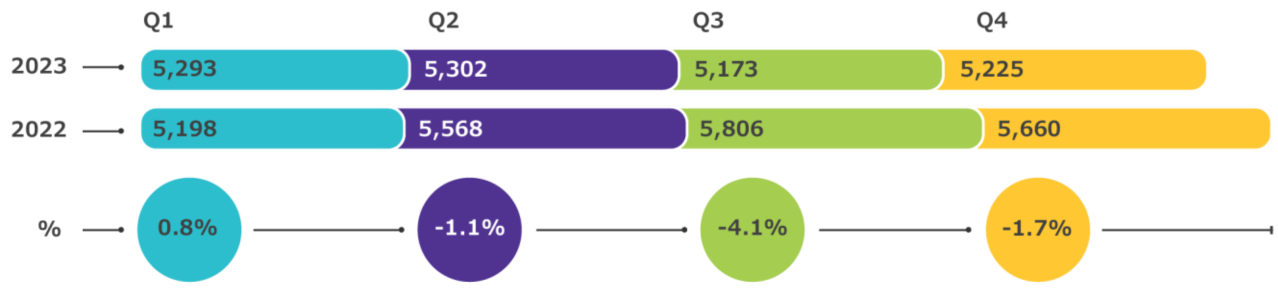
[1] Not defined by International Financial Reporting Standards (IFRS).
[2] Not defined by International Financial Reporting Standards (IFRS); EBITDA corresponds to operating result (EBIT) adjusted by depreciation, amortization, impairment losses, and reversals of impairment losses.

## Development of sales and results of operations

The net sales in the individual quarters as well as the respective organic growth rates in 2023 are presented in the following graph:

### Group

**Net sales and organic growth[1] by quarter[2]**
€ million/organic growth in %




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

In fiscal 2023, the net sales by business sector developed as follows:

### Group

**Net sales by business sector**

| € million | 2023 | Share | Organic growth[1] | Exchange rate effects | Acquisitions/ divestments | Total change | 2022 | Share |
|---|---|---|---|---|---|---|---|---|
| Life Science | 9,281 | 44% | -7.9% | -2.7% | 0.1% | -10.6% | 10,380 | 47% |
| Healthcare | 8,053 | 38% | 8.5% | -5.8% | – | 2.7% | 7,839 | 35% |
| Electronics | 3,659 | 18% | -5.1% | -4.1% | 0.3% | -8.8% | 4,013 | 18% |
| **Group** | **20,993** | **100%** | **-1.6%** | **-4.1%** | **0.1%** | **-5.6%** | **22,232** | **100%** |

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

In fiscal 2023, the Group recorded the following regional sales performance:

## Group

**Net sales by region**

| € million | 2023 | Share | Organic growth[1] | Exchange rate effects | Acquisitions/ divestments | Total change | 2022 | Share |
|---|---|---|---|---|---|---|---|---|
| Europe | 6,037 | 29% | -1.3% | -2.1% | – | -3.4% | 6,248 | 28% |
| North America | 5,952 | 28% | -3.8% | -2.7% | 0.1% | -6.4% | 6,361 | 29% |
| Asia-Pacific (APAC) | 6,936 | 33% | -4.3% | -5.8% | 0.2% | -9.9% | 7,697 | 35% |
| Latin America | 1,331 | 6% | 18.6% | -10.5% | – | 8.1% | 1,231 | 5% |
| Middle East and Africa (MEA) | 737 | 4% | 8.8% | -2.7% | – | 6.1% | 695 | 3% |
| **Group** | **20,993** | **100%** | **-1.6%** | **-4.1%** | **0.1%** | **-5.6%** | **22,232** | **100%** |

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

- In fiscal 2023, the Group generated net sales of € 20,993 million (2022: € 22,232 million), representing a year-on-year decline of € 1,239 million or -5.6%. Negative exchange rate effects served to reduce net sales by € 902 million or -4.1% in fiscal 2023. These effects largely resulted from the exchange rate development of the Chinese renminbi, the US dollar, and the Argentinian peso. Net sales fell by € 357 million or -1.6% organically. Net sales in the Life Science and Electronics business sectors declined, while the Healthcare business sector recorded organic growth. The portfolio-related net sales increase of € 19 million mainly resulted from the acquisition of M Chemicals Inc., Korea.
- Net sales in the Life Science business sector decreased by € 1,100 million or -10.6% year-on-year to € 9,281 million (2022: € 10,380 million). This development was mainly attributable to organic effects, which amounted to € 821 million or -7.9%. Exchange rate effects of € 285 million or -2.7% also contributed to the downturn in net sales. The Life Science business sector accounted for the largest share of Group net sales at 44% (2022: 47%), followed by Healthcare at 38% (2022: 35%). Net sales in the Healthcare business sector increased by € 214 million or 2.7% year-on-year to € 8,053 million (2022: € 7,839 million). Negative exchange rate effects of -5.8% were offset by organic growth of 8.5%. The € 354 million decline in net sales in the Electronics business sector to € 3,659 million (2022: € 4,013 million) was driven by organic effects of -5.1% and exchange rate effects of -4.1%. This was offset by a positive effect of 0.3% from the acquisition of M Chemicals Inc., Korea. The percentage contribution of Electronics to Group net sales was unchanged year-on-year at 18%.
- Orders already received by the reporting date that will result in net sales in future periods amounted to around € 4 billion as of December 31, 2023 (December 31, 2022: around € 6 billion), of which around € 3 billion related to the Life Science business sector (December 31, 2022: around € 4 billion).

The Consolidated Income Statement of the Group is as follows:

## Group

**Consolidated Income Statement**

| | | | | | Change | |
|---|---|---|---|---|---|---|
| € million | 2023 | % | 2022 | % | € million | % |
| **Net sales** | **20,993** | **100.0%** | **22,232** | **100.0%** | **-1,239** | **-5.6%** |
| Cost of sales | -8,600 | -41.0% | -8,527 | -38.4% | -73 | 0.9% |
| **Gross profit** | **12,392** | **59.0%** | **13,705** | **61.6%** | **-1,313** | **-9.6%** |
| Marketing and selling expenses | -4,510 | -21.5% | -4,714 | -21.2% | 203 | -4.3% |
| Administration expenses | -1,392 | -6.6% | -1,306 | -5.9% | -86 | 6.6% |
| Research and development costs | -2,445 | -11.6% | -2,521 | -11.3% | 75 | -3.0% |
| Impairment losses and reversals of impairment losses on financial assets (net) | -51 | -0.2% | -6 | – | -45 | >100% |
| Other operating income and expenses | -385 | -1.8% | -685 | -3.1% | 300 | -43.8% |
| **Operating result (EBIT)[1]** | **3,609** | **17.2%** | **4,474** | **20.1%** | **-865** | **-19.3%** |
| Financial result | -125 | -0.6% | -187 | -0.8% | 62 | -33.0% |
| **Profit before income tax** | **3,484** | **16.6%** | **4,287** | **19.3%** | **-803** | **-18.7%** |
| Income tax | -650 | -3.1% | -948 | -4.3% | 298 | -31.4% |
| **Profit after tax** | **2,834** | **13.5%** | **3,339** | **15.0%** | **-505** | **-15.1%** |
| Non-controlling interests | -10 | – | -14 | -0.1% | 3 | -25.6% |
| **Net income** | **2,824** | **13.5%** | **3,326** | **15.0%** | **-502** | **-15.1%** |

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

## Group

**Research and development costs by business sector[1] - 2023**
€ million/%


[1] Not presented: research and development costs of € 94 million allocated to Corporate and Other.

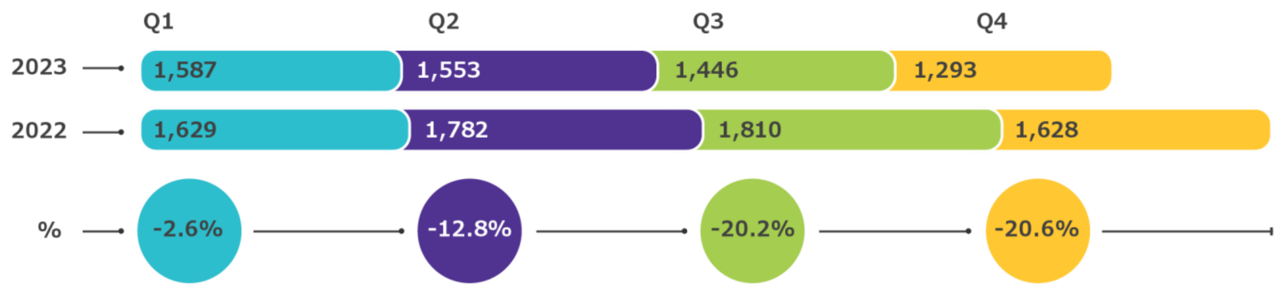
There was a year-on-year decline in the operating result (EBIT) in fiscal 2023. This was largely due to the lower level of gross profit, which was only partially offset by a reduction in operating expenses. In particular, the year-on-year decline in the gross margin was due to lower sales of high-margin products in the Life Science business sector that had experienced strong demand in conjunction with the Covid-19 pandemic. In addition, as a result of the agreement terminating the strategic alliance with Pfizer Inc., United States, the cost of sales included royalties for the Bavencio® product for the first time from July 1, 2023, which in turn reduced the gross margin.

- Marketing and selling expenses declined on the back of lower logistics costs in particular.
- Administration expenses increased as a result of a program to continuously improve processes and align the Group Functions more closely with the businesses in particular.
- Accounting for a 70% (2022: 70%) share of Group R&D spending (excluding research and development cost allocated to Corporate and Other), Healthcare was the most research-intensive business sector of the Group. Further information can be found in the “**Research and Development**” chapter.
- Other operating income and expenses fell compared with the previous year, mainly as a result of lower profit transfer expenses in the Healthcare business sector. Impairment losses on non-financial assets also declined.
- Overall, the aforementioned developments led to a reduction in the EBIT margin by around three percentage points, from 20.1% in the previous year to 17.2%.
- Compared to the previous year, EBITDA pre, the key financial indicator used to steer operating business, fell by € 970 million or -14.2% to € 5,879 million (2022: € 6,849 million).
- The financial result improved by 33.0% to € -125 million (2022: € -187 million). This was due in particular to the positive development of net interest income. Details about 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 € 650 million (2022: € 948 million) and resulted in a tax rate of 18.7% (2022: 22.1%). The downturn in earnings was accompanied by a corresponding reduction in taxes. Furthermore, a non-recurring deferred tax income had a reducing effect on the tax rate.
- The net income attributable to shareholders of Merck KGaA, Darmstadt, Germany, declined by 15.1% to € 2,824 million (2022: € 3,326 million) and resulted in a reduction in earnings per share to € 6.49 (2022: € 7.65).

The development of EBITDA pre in the individual quarters in comparison with 2022 as well as the respective growth rates are presented in the following overview:

## Group

**EBITDA pre[1] and change by quarter[2]**
€ million/change in %




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

## Group

**EBITDA pre[1] by business sector[2] - 2023**
€ million/%


[1] Not defined by International Financial Reporting Standards (IFRS).
[2] Not presented: Decline in Group EBITDA pre by € -397 million due to Corporate and Other.

# Net assets and financial position

## Group

**Balance sheet structure**

| | Dec. 31, 2023 | | Dec. 31, 2022 | | Change | |
|---|---|---|---|---|---|---|
| | € million | % | € million | % | € million | % |
| **Non-current assets**[1] | **36,102** | **74.4%** | **36,334** | **74.9%** | **-232** | **-0.6%** |
| **thereof:** | | | | | | |
| Goodwill[1] | 17,845 | | 18,389 | | -544 | |
| Other intangible assets[1] | 6,551 | | 7,335 | | -784 | |
| Property, plant and equipment[1] | 9,056 | | 8,204 | | 852 | |
| Other non-current assets | 2,650 | | 2,406 | | 244 | |
| **Current assets** | **12,393** | **25.6%** | **12,201** | **25.1%** | **192** | **1.6%** |
| **thereof:** | | | | | | |
| Inventories | 4,637 | | 4,632 | | 5 | |
| Trade and other current receivables | 4,004 | | 4,114 | | -110 | |
| Other current financial assets | 499 | | 321 | | 178 | |
| Other current assets | 1,271 | | 1,280 | | -9 | |
| Cash and cash equivalents | 1,982 | | 1,854 | | 128 | |
| **Total assets**[1] | **48,495** | **100.0%** | **48,535** | **100.0%** | **-40** | **-0.1%** |
| **Equity** | **26,754** | **55.2%** | **26,005** | **53.6%** | **749** | **2.9%** |
| **Non-current liabilities**[1] | **13,042** | **26.9%** | **13,015** | **26.8%** | **26** | **0.2%** |
| **thereof:** | | | | | | |
| Non-current provisions for employee benefits | 2,192 | | 2,030 | | 162 | |
| Other non-current provisions | 277 | | 299 | | -22 | |
| Non-current financial debt | 9,239 | | 9,200 | | 39 | |
| Other non-current liabilities[1, 2] | 1,333 | | 1,486 | | -153 | |
| **Current liabilities**[1] | **8,699** | **17.9%** | **9,514** | **19.6%** | **-815** | **-8.6%** |
| **thereof:** | | | | | | |
| Current provisions[2] | 658 | | 453 | | 205 | |
| Current financial debt | 702 | | 1,228 | | -526 | |
| Trade and other current payables/ refund liabilities[1] | 3,422 | | 3,411 | | 11 | |
| Other current liabilities[2] | 3,918 | | 4,422 | | -504 | |
| **Total equity and liabilities**[1] | **48,495** | **100.0%** | **48,535** | **100.0%** | **-40** | **-0.1%** |

[1] Previous year's figures have been adjusted, see Note (6) "**Acquisitions and Divestments**" in the Notes to the Consolidated Financial Statements.

[2] Previous year's figures have been adjusted, see Note (2) "**Reporting principles**" in the Notes to the Consolidated Financial Statements.

- The total assets of the Group were essentially unchanged at € 48,495 million as of December 31, 2023 (December 31, 2022: € 48,535 million).
- Goodwill was down as against the previous year as a result of the depreciation of the U.S. dollar against the euro in particular.
- Other intangible assets were reduced by amortization and currency effects, in particular stemming from the U.S. dollar. Slightly higher investment than in the previous year, in particular from in-licensing in the Healthcare business sector (further information can be found under "**Other intangible assets**" in the Notes to the Consolidated Financial Statements), was not enough to offset this development.
- The year-on-year increase in property, plant and equipment was attributable to additions of € 1,981 million (2022: € 1,730 million), which significantly exceeded depreciation and disposals in the reporting period.
- Of the additions to property, plant and equipment in 2023, € 391 million (2022: € 279 million) related to strategic investments in Germany, including € 329 million for the expansion of the Darmstadt site. At the Darmstadt site, the Healthcare business sector invested € 51 million in a new research center and the Life Science business sector invested € 31 million in a new membrane production facility. Furthermore, the Life Science business sector invested € 50 million in a new filling and logistics center in Schnelldorf. Outside Germany, there were high levels of investment in strategic projects in the United States (€ 330 million), Ireland (€ 157 million) and China (€ 90 million) in particular. In the United States, the Life Science business sector invested € 69 million in expanding its capacities for biosafety testing and analytical development services in Rockville, while the Electronics business sector invested € 30 million in a new production facility for specialty gases for the semiconductor industry in Hometown. In Ireland, the Life Science business sector invested € 149 million in the expansion of membrane production capacities and the construction of a new filtration plant in Cork. In China, the Electronics business sector invested € 34 million in the establishment of a site for advanced semiconductor solutions in Zhangjiagang.
- Trade and other current receivables mainly developed in line with the business volume. At the same time, this item was reduced by exchange rate effects.
- In fiscal 2023, the equity of the Group rose by 2.9% to € 26,754 million (December 31, 2022: € 26,005 million). Profit after tax (€ 2,834 million) contributed to this development. By contrast, a negative currency translation difference (€ 1,003 million) and the dividend payments and profit distribution in the reporting year served to reduce equity (see "**Consolidated Statement of Changes in Net Equity**" in the Consolidated Financial Statements). Partially as a result of the ongoing reduction in net financial debt, the equity ratio improved by more than one percentage point to 55.2% (December 31, 2022: 53.6%).
- The increase in non-current provisions for employee benefits essentially resulted from actuarial losses in connection with the discount rate.
- Current provisions increased as a result of follow-on obligations in connection with the discontinuation of the development program for evobrutinib and ongoing efficiency programs (further information can be found in Note (27) "**Other provisions**" in the Notes to the Consolidated Financial Statements).
- Current financial liabilities were reduced by the repayment of a bond in the amount of € 600 million and an early partial repayment of hybrid bonds in the amount of € 275 million.

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

## Group

**Net financial debt[1]**

| € million | Dec. 31, 2023 | Dec. 31, 2022 | Change € million | Change % |
|---|---|---|---|---|
| Bonds | 7,802 | 8,726 | -924 | -10.6% |
| Bank loans | 283 | 203 | 80 | 39.4% |
| Liabilities to related parties | 1,196 | 919 | 276 | 30.1% |
| Loans from third parties and other financial debt | 68 | 59 | 9 | 15.7% |
| Liabilities from derivatives (financial transactions) | 77 | 30 | 47 | >100.0% |
| Lease liabilities | 515 | 491 | 24 | 5.0% |
| **Financial debt** | **9,941** | **10,428** | **-487** | **-4.7%** |
| **less:** | | | | |
| Cash and cash equivalents | 1,982 | 1,854 | 128 | 6.9% |
| Other current financial assets[2] | 459 | 247 | 212 | 85.9% |
| **Net financial debt[1]** | **7,500** | **8,328** | **-828** | **-9.9%** |

[1] Not defined by International Financial Reporting Standards (IFRSs).

[2] Excluding current derivatives (operational) and contingent considerations, which are recognized in the context of business combinations according to IFRS 3.

Bonds were reduced by the repayment of a bond in the amount of € 600 million in December 2023 and the partial repurchase of a nominal volume of € 275 million of hybrid bonds issued in 2019 and 2020.

## Group

**Reconciliation of net financial debt[1]**

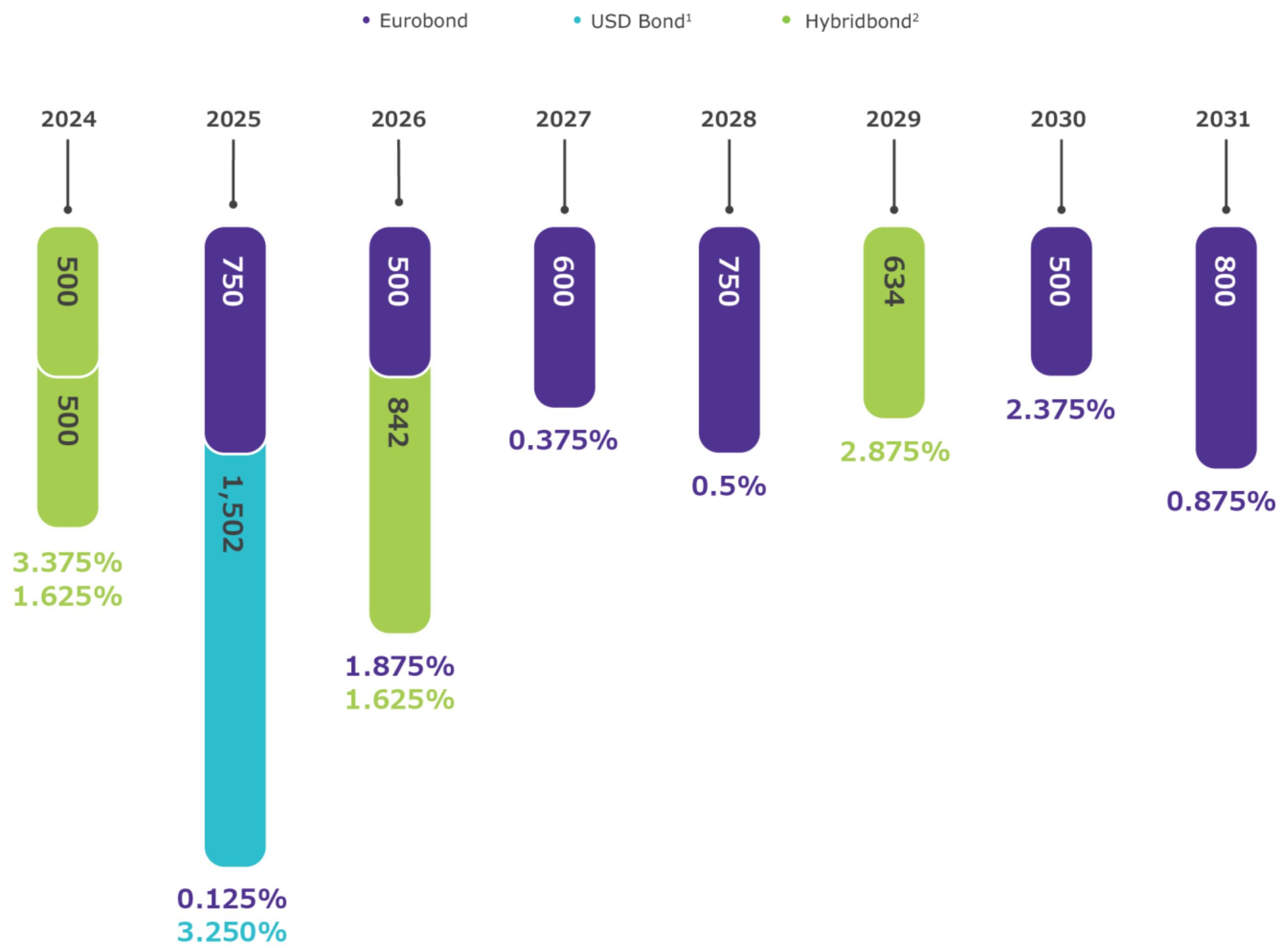
| € million | 2023 | 2022 |
|---|---|---|
| **January 1** | **8,328** | **8,753** |
| Operating Cash Flow | -3,784 | -4,259 |
| Payments for investments in intangible assets[2] | 216 | 275 |
| Payments from the disposal of intangible assets[2] | -136 | -38 |
| Payments for investments in property, plant and equipment[2] | 1,807 | 1,531 |
| Payments from the disposal of property, plant and equipment[2] | -19 | -21 |
| Acquisitions[2] | 12 | 854 |
| Payments from divestments[2] | – | -4 |
| Change in lease liabilities | 201 | 187 |
| Dividend payments/profit withdrawals[2] | 1,164 | 967 |
| Currency translation difference | -30 | 86 |
| Other | -258 | -3 |
| **December 31** | **7,500** | **8,328** |

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

[2] As reported in the Consolidated Cash Flow Statement.

- Traditionally, the capital market represents a major source of financing for the Group, for instance via bond issues. As of December 31, 2023, there were liabilities of € 3.9 billion from a debt issuance program most recently renewed in fiscal 2023 (December 31, 2022: € 4.5 billion).
- Loan agreements represent a further source of financing for the Group. A € 2.5 billion syndicated loan facility is in place until 2028 to cover unexpected cash needs. This credit line is a backup facility that is intended to be used in exceptional circumstances only. The Group also agreed upon several bilateral loan facilities.

- In addition, the Group has a commercial paper program with a volume of € 2.5 billion at its disposal. Within the scope of this program, the Group can issue short-term commercial paper with a maturity of up to one year.
- The maturities of our financial liabilities are aligned with our planned free cash flow. The repayment profile of the issued bonds was as follows:




[1] The nominal volumes of bonds denominated in U.S. dollars were converted into euros at the closing rate on December 31, 2023.
[2] For the hybrid bonds, repayment is assumed at the earliest possible date.

- The capital market uses the assessments published by rating agencies to help lenders assess the risks of a financial instrument used by the Group. The Group currently rated by Standard & Poor's and Moody's. Standard & Poor's has issued a long-term credit rating of A with a stable outlook, while Moody's has issued a rating of A3 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 financial debt was not secured by liens or similar forms of collateral. The loan agreements do not contain any financial covenants. There were no indications that the availability of extended credit lines was restricted. Cash and cash equivalents included restricted cash amounting to € 404 million (December 31, 2022: € 456 million). We pursue a sustainable dividend policy and aim for a target corridor of 20% to 25% of earnings per share pre when determining the amount of the dividend. The average borrowing cost on December 31, 2023, was 2.1% (December 31, 2022: 1.9%).

The development of key balance sheet figures was as follows:

## Group

**Key balance sheet figures**

| % | | Dec. 31, 2023 | Dec. 31, 2022 | Dec. 31, 2021 | Dec. 31, 2020 | Dec. 31, 2019 |
|---|---|---|---|---|---|---|
| Equity ratio[1] | Total equity / Total assets | 55.2% | 53.6% | 47.2% | 40.7% | 40.9% |
| Asset ratio[1] | Non-current assets / Total assets | 74.4% | 74.9% | 75.8% | 77.8% | 79.4% |
| Asset coverage[1] | Total equity / Non-current assets | 74.1% | 71.6% | 62.3% | 52.3% | 51.5% |
| Finance structure[1] | Current liabilities / Liabilities (total) | 40.0% | 42.2% | 43.6% | 37.3% | 45.7% |

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

In the area of financial risks and opportunities, the Group uses an active management strategy to reduce the effects of fluctuations in exchange and interest rates. This also includes the use of derivative financial instruments. Further details on liquidity, counterparty and financial market risks and opportunities are presented in the "**Report on Risks and Opportunities**" in the "**Financial risks and opportunities**" section.

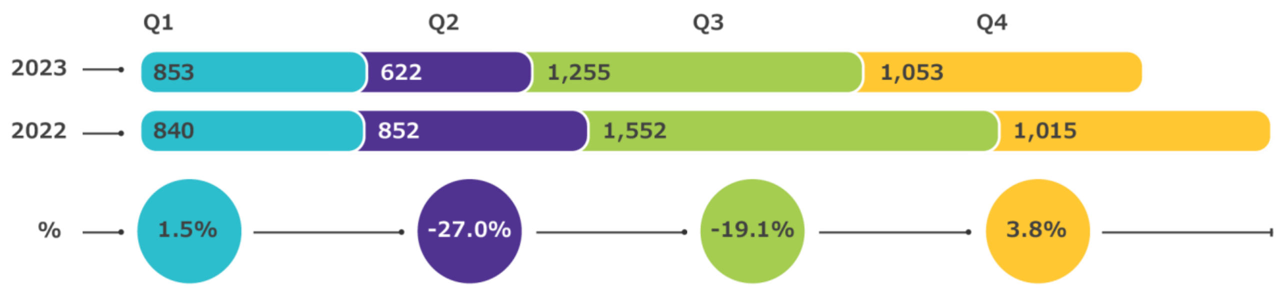
In fiscal 2023, operating cash flow, which is one of the three most important key performance indicators alongside net sales and EBITDA pre, decreased by -11.2% to € 3,784 million (2022: € 4,259 million). This was mainly due to the development of EBITDA pre. This was countered by a reduction in working capital and lower tax payments. Further information about the development of the operating cash flow can be found in the "**Internal Management System**" chapter in this Combined Management Report, under "**Consolidated Cash Flow Statement**" in the Consolidated Financial Statements and in Note (16) "**Operating cash flow**" in the Notes to the Consolidated Financial Statements.

The distribution of operating cash flow across the individual quarters and the percentage changes in comparison with 2022 were as follows:

## Group

**Operative cash flow[1] and change by quarter[2]**

€ million/change in %




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

## Overall assessment of business performance and economic situation

- Despite the challenging macroeconomic environment and headwinds in individual markets, the Group can look back on a predominantly steady fiscal 2023 thanks to the diversified nature of its business sectors. As anticipated, Life Science business declined as a result of the forecast downturn in demand for products in connection with the Covid-19 pandemic and the slower than expected reduction in customer inventories in the Process Solutions business unit. Additionally, the economic slowdown in the semiconductor industry led to weak business performance in the Electronics business sector. However, Healthcare achieved strong organic growth that partially offset the negative development in the other business sectors.
- All in all, the Group's net sales declined by -5.6% or € -1.2 billion to € 21 billion in fiscal 2023. Our most important key performance indicator, EBITDA pre, fell by -14.2% to € 5.9 billion. Earnings were adversely affected by the challenging market conditions and exchange rate effects. We will propose to the Annual General Meeting an unchanged dividend payment of € 2.20 per share for fiscal 2023.
- The solid financing policies of the Group were reflected in its consistently good key balance sheet figures. The equity ratio remained at 55.2% as of December 31, 2023 (December 31, 2022: 53.6%). Net financial debt was reduced further, amounting to € 7.5 billion at the end of the fiscal year (2022: € 8.3 billion).
- Based on our solid net assets and financial position as well as our diversified operations, we view the economic situation of the Group as positive overall. Thanks to our resilient business model and our clear positioning as a science and technology company, we are well positioned even in economically challenging times.