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GENERAL NOTES

1. PRINCIPLES

I. GROUP STRUCTURE

Fresenius is a global healthcare group with products and services for dialysis, hospitals and outpatient medical care. In addition, the Fresenius Group focuses on hospital operations and also manages projects and provides services for hospitals and other healthcare facilities worldwide. Besides the activities of the parent company Fresenius SE & Co. KGaA, Bad Homburg v. d. H., Germany, the operating activities are organized amongst the following legally independent business segments in the fiscal year 2022:

- Fresenius Medical Care
- Fresenius Kabi
- Fresenius Helios
- Fresenius Vamed

Fresenius Medical Care offers services and products for patients with chronic kidney failure. As of December 31, 2022, Fresenius Medical Care treated 344,687 patients at 4,116 dialysis clinics. Dialyzers and dialysis machines are among the most important product lines. In addition, Fresenius Medical Care offers dialysis-related services.

Fresenius Kabi specializes in products for the therapy and care of critically and chronically ill patients. The portfolio includes biopharmaceuticals, clinical nutrition, MedTech products, intravenously administered generic drugs (generic IV drugs), and IV fluids.

Fresenius Helios is Europe's leading private hospital operator. Under the holding Helios Health, the company includes Helios Germany, Helios Spain (Quirónsalud), and the Eugin Group. At the end of 2022, Helios Germany operated a total of 87 hospitals, around 240 outpatient clinics, 6 prevention centers and 21 occupational health centers. In Spain, Quirónsalud operated 50 hospitals, around 100 outpatient centers, and around 300 occupational risk prevention centers at the end of 2022. In addition, Helios Spain is active in Latin America with 8 hospitals as well as a provider of medical diagnostics. The Eugin Group's network comprises 44 clinics and an additional 37 sites across 10 countries on 3 continents. Eugin offers a wide spectrum of state-of-the-art services in the field of fertility treatments.

Fresenius Vamed manages projects and provides services for hospitals as well as other healthcare facilities worldwide and is a leading post-acute care provider in Central Europe. The portfolio ranges along the entire value chain from project development, planning, and turnkey construction, via maintenance and technical management, to total operational management. The services are aimed at various areas of healthcare, ranging from prevention and acute care to rehabilitation and nursing.

Fresenius SE & Co. KGaA owned 32.17% of the subscribed capital of Fresenius Medical Care AG & Co. KGaA (FMC-AG & Co. KGaA) at the end of the fiscal year 2022. Fresenius Medical Care Management AG, the general partner of FMC-AG & Co. KGaA, is a wholly owned subsidiary of Fresenius SE & Co. KGaA. Through this structure, Fresenius SE & Co. KGaA has rights that give Fresenius SE & Co. KGaA the ability to direct the relevant activities that significantly affect the earnings of FMC-AG & Co. KGaA. Therefore, FMC-AG & Co. KGaA is fully consolidated in the consolidated financial statements of the Fresenius Group.

Fresenius SE & Co. KGaA continued to hold 100% of the management companies of the business segments Fresenius Kabi (Fresenius Kabi AG) as well as Fresenius Helios and Fresenius Vamed (both held through Fresenius ProServe GmbH) on December 31, 2022. Through Fresenius ProServe GmbH, Fresenius SE & Co. KGaA holds 100% in Helios Kliniken GmbH and Helios Healthcare Spain S.L. (Quirónsalud), 100% in Helios Fertility Spain S.L.U. and Helios Healthcare USA, Inc. (Eugin group) as well as a 77% stake in VAMED Aktiengesellschaft. In addition, Fresenius SE & Co. KGaA consolidates companies with corporate holding functions regarding real estate, financing and insurance, as well as in Fresenius Digital Technology GmbH which provides intercompany services in the field of information technology.

The reporting currency and functional currency of the Fresenius Group is the euro. In order to improve the clarity of presentation, amounts are generally presented in million euros. Amounts less than €1 million, after rounding, are marked with "0".

II. BASIS OF PRESENTATION

Fresenius SE & Co. KGaA, as a stock exchange listed company with a domicile in a member state of the European Union (EU), fulfills its obligation to prepare and publish the consolidated financial statements in accordance with the International Financial Reporting Standards (IFRS) as adopted by the EU and applying Section 315e of the German Commercial Code (HGB). The consolidated financial statements of Fresenius SE & Co. KGaA at December 31, 2022 have been prepared and are published in accordance with the Standards and interpretations in effect on the reporting date, and endorsed in the EU, as issued by the International Accounting Standards Board (IASB) and the IFRS Interpretations Committee (IFRS IC).

In order to improve the clarity of presentation, various items are aggregated in the consolidated statement of financial position and in the consolidated statement of income. These items are shown separately in the notes to provide useful information to the readers of the consolidated financial statements.

Moreover, the notes include information required by HGB according to Section 315e (1) HGB. The consolidated financial statements include a management report according to Section 315e HGB in conjunction with Section 315 HGB.

The consolidated statement of financial position contains all information required to be disclosed by International Accounting Standard (IAS) 1, Presentation of Financial Statements, and is classified on the basis of the liquidity of assets and liabilities. The consolidated statement of income is classified using the cost-of-sales accounting format.

The general partner of Fresenius SE & Co. KGaA is Fresenius Management SE. Fresenius Management SE prepares its own consolidated financial statements. The Else Kröner-Fresenius-Stiftung is the sole shareholder of Fresenius Management SE. The shareholder representatives elect in the Annual General Meeting of Fresenius Management SE its Supervisory Board.

At February 21, 2023, the Management Board of Fresenius Management SE authorized the consolidated financial statements for issue and passed it to the Supervisory Board of Fresenius SE & Co. KGaA. The Supervisory Board has to review and approve the consolidated financial statements.

III. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

a) Principles of consolidation

The consolidated financial statements have been prepared using uniform accounting methods. Acquisitions of companies are accounted for applying the purchase method. Capital consolidation is performed at the date of acquisition. Initially, all identifiable assets and liabilities of subsidiaries as well as the noncontrolling interests are recognized at their fair values. The costs and acquired noncontrolling interests are then compared and offset against the fair value of the assets acquired and liabilities assumed. Any remaining balance is recognized as goodwill and is tested at least once a year for impairment.

All intercompany revenues, expenses, income, receivables and payables as well as other intercompany financial obligations and contingent liabilities are eliminated. Profits and losses on items of property, plant and equipment and inventory acquired from other Group entities are also eliminated. Deferred tax assets and liabilities are recognized on temporary differences resulting from consolidation procedures.

Noncontrolling interests are the portion of equity of Group entities not attributable, directly or indirectly, to Fresenius SE & Co. KGaA and are recognized at fair value at the date of first consolidation using the full goodwill method. Profits and losses attributable to the noncontrolling interests are separately disclosed in the consolidated statement of income.

The Fresenius Group writes put options on certain noncontrolling interests. A portion of these put options relate to dialysis clinics of Fresenius Medical Care in which nephrologists or nephrology groups own an equity interest. In addition, as part of the InterWell Health business combination and the acquisition of mAbxience, put options were granted to noncontrolling shareholders. The put options are settled in cash when exercised. The Fresenius Group records the put options in long-term provisions and other long-term liabilities as well as short-term provisions and other short-term liabilities at present value of the redemption amount at the date of the consolidated financial statements. The Fresenius Group, in line with IAS 8, Accounting Policies, Changes in Accounting Estimates and Errors, paragraph 10, applies the present access method. According to the present access method, noncontrolling interests are recorded in equity when the risks and rewards of ownership reside with the noncontrolling interests holders. The initial recognition of the put option liability, as well as valuation differences, are recorded in equity with no impact to the consolidated statement of income.

b) Composition of the Group

Besides Fresenius SE & Co. KGaA, the consolidated financial statements include all material subsidiaries according to IFRS 10, which Fresenius SE & Co. KGaA can control. Fresenius SE & Co. KGaA controls an entity if it has power over the entity. That is, Fresenius SE & Co. KGaA has existing rights that give Fresenius SE & Co. KGaA the current ability to direct the relevant activities, which are the activities that significantly affect the entity's return. In addition, Fresenius SE & Co. KGaA is exposed to, or has rights to, variable returns from the involvement with the entity and Fresenius SE & Co. KGaA has the ability to use its power over the entity to affect the amount of Fresenius SE & Co. KGaA's return.

Generally, entities in which Fresenius SE & Co. KGaA, directly or indirectly, holds more than 20% and less than 50% of the voting rights and can exercise a significant influence over their financial and operating policies are considered associates. There are no investments in equity method investees that are individually material to the Fresenius Group. Fresenius Medical Care's investment in Vifor Fresenius Medical Care Renal Pharma Ltd. makes up a large portion of the equity method investees, however it is not individually material to the Fresenius Group. Associates are accounted for using the equity method. Investments that are not classified as associated companies are recorded at fair value.

The consolidated financial statements of 2022 included, in addition to Fresenius SE & Co. KGaA, 2,940 (2021: 2,926) consolidated companies and 113 (2021: 84) companies were accounted for under the equity method. In 2022, there were no material changes in the scope of consolidated entities, except for those mentioned in note 2, Acquisitions, divestitures and investments.

The complete list of the investments of Fresenius SE & Co. KGaA, registered office in 61352 Bad Homburg v. d. H., Else-Kröner-Straße 1, Germany, registered in the Commercial Register of the local court in Bad Homburg v. d. H. under B11852, will be submitted to the Federal Gazette and the companies register as well as published on the website of Fresenius SE & Co. KGaA (www.fresenius.com/financial-reports-and-presentations).

For the fiscal year 2022, the following consolidated German subsidiaries of the Fresenius Group will apply the exemption provided in Sections 264 (3) and 264b, respectively, of the German Commercial Code (HGB):

Name of the company	Registered office
Corporate	
Fresenius Digital Technology GmbH	Bad Homburg v. d. H.
Fresenius Immobilien-Verwaltungs-GmbH & Co. Objekt Friedberg KG	Bad Homburg v. d. H.
Fresenius Immobilien-Verwaltungs-GmbH & Co. Objekt St. Wendel KG	Bad Homburg v. d. H.
Fresenius Immobilien-Verwaltungs-GmbH & Co. Objekt Schweinfurt KG	Bad Homburg v. d. H.
Fresenius ProServe GmbH	Bad Homburg v. d. H.
ProServe Krankenhaus Beteiligungsgesellschaft mbH & Co. KG	München
Fresenius Kabi	
Fresenius HemoCare GmbH	Bad Homburg v. d. H.
Fresenius HemoCare Beteiligungs GmbH	Bad Homburg v. d. H.
Fresenius Kabi AG	Bad Homburg v. d. H.
Fresenius Kabi Deutschland GmbH	Bad Homburg v. d. H.
Fresenius Kabi Logistik GmbH	Friedberg
Fresenius Kabi MedTech Services GmbH	Alzenau
medi1one medical gmbh	Waiblingen

Name of the company	Registered office
Fresenius Helios	
Gesundheitsmanagement Elbe-Fläming GmbH	Burg
Helios Agnes-Karll Krankenhaus GmbH	Bad Schwartau
Helios Aukamm-Klinik Wiesbaden GmbH	Wiesbaden
Helios Bördeklinik GmbH	Oschersleben
Helios Fachklinik Schleswig GmbH	Schleswig
Helios Fachklinik Vogelsang-Gommern GmbH	Gommern
Helios Fachkliniken Hildburghausen GmbH	Hildburghausen
Helios Frankenwaldklinik Kronach GmbH	Kronach
Helios Hanseklinikum Stralsund GmbH	Stralsund
Helios Health GmbH	Berlin
Helios Klinik Blankenhain GmbH	Blankenhain
Helios Klinik Bleicherode GmbH	Bleicherode
Helios Klinik für Herzchirurgie Karlsruhe GmbH	Karlsruhe
Helios Klinik Herzberg/Osterode GmbH	Herzberg am Harz
Helios Klinik Jerichower Land GmbH	Burg
Helios Klinik Leezen GmbH	Leezen
Helios Klinik Leisnig GmbH	Leisnig
Helios Klinik Lengerich GmbH	Lengerich
Helios Klinik Köthen GmbH	Köthen (Anhalt)
Helios Klinik Rottweil GmbH	Rottweil
Helios Klinik Schkeuditz GmbH	Schkeuditz
Helios Klinik Schleswig GmbH	Schleswig
Helios Klinik Wipperfürth GmbH	Wipperfürth
Helios Klinik Zerbst/Anhalt GmbH	Zerbst
Helios Kliniken GmbH	Berlin
Helios Kliniken Breisgau Hochschwarzwald GmbH	Müllheim
Helios Kliniken Mansfeld-Südharz GmbH	Sangerhausen
Helios Kliniken Mittelweser GmbH	Nienburg/Weser

Name of the company	Registered office
Fresenius Helios	
Helios Kliniken Taunus GmbH	Bad Schwalbach
Helios Klinikum Aue GmbH	Aue
Helios Klinikum Bad Saarow GmbH	Bad Saarow
Helios Klinikum Berlin-Buch GmbH	Berlin
Helios Klinikum Erfurt GmbH	Erfurt
Helios Klinikum Gifhorn GmbH	Gifhorn
Helios Klinikum Gotha GmbH	Gotha
Helios Klinikum Hildesheim GmbH	Hildesheim
Helios Klinikum Meiningen GmbH	Meiningen
Helios Klinikum Pirna GmbH	Pirna
Helios Klinikum Schwelm GmbH	Schwelm
Helios Klinikum Siegburg GmbH	Siegburg
Helios Klinikum Uelzen GmbH	Uelzen
Helios Klinikum Wuppertal GmbH	Wuppertal
Helios Park-Klinikum Leipzig GmbH	Leipzig
Helios Privatkliniken GmbH	Bad Homburg v. d. H.
Helios Reinigung GmbH	Berlin
Helios Spital Überlingen GmbH	Überlingen
Helios St. Elisabeth Klinik Oberhausen GmbH	Oberhausen
Helios St. Elisabeth-Krankenhaus Bad Kissingen GmbH	Bad Kissingen
Helios St. Marienberg Klinik Helmstedt GmbH	Helmstedt
Helios Versorgungszentren GmbH	Berlin
Helios Vogtland-Klinikum Plauen GmbH	Plauen
Helios Weißeritztal-Kliniken GmbH	Freital
Herzzentrum Leipzig GmbH	Leipzig
Kliniken Miltenberg-Erlenbach GmbH	Erlenbach
Medizinisches Versorgungszentrum am Helios Klinikum Bad Saarow GmbH	Bad Saarow
MVZ Campus Gifhorn GmbH	Gifhorn
Poliklinik am Helios Klinikum Buch GmbH	Berlin

c) Classifications

Comparative information for certain items have been reclassified to conform with current year's presentation.

d) Hyperinflationary accounting

Fresenius Group's subsidiaries operating in Argentina, Lebanon and Turkey apply IAS 29, Financial Reporting in Hyperinflationary Economies, due to inflation in those countries. For the fiscal year 2022, the application of IAS 29 resulted in an effect on net income attributable to shareholders of Fresenius SE & Co. KGaA of -€44 million (2021:-€18 million) included in other operating expenses. The hyperinflationary accounting effects of the initial application on the opening consolidated statement of financial position in the amount of €12 million are presented within accumulated other comprehensive income (loss) related to foreign currency translation, and ongoing re-translation effects of comparative amounts are recorded in other comprehensive income (loss) within the consolidated financial statements.

e) Revenue recognition policy

Revenue is recognized in accordance with IFRS 15, Revenue from Contracts with Customers.

Revenues from services and products are billed according to the usual contract arrangements with customers, patients and related third parties. For services performed for patients, the transaction price is estimated based on either Fresenius Group's standard rates, rates determined under reimbursement arrangements or by government regulations. These arrangements are generally with third party payors, such as U.S. Medicare, U.S. Medicaid, German health insurance funds or commercial insurers. Amounts billed are recorded net of contractually agreed upon discounts or rebates to reflect the estimated amounts to be received from these payors. Estimates are determined on the basis of historical experience.

If the collection of the billed amount or a portion of the billed amount for services performed for patients is considered to be uncertain at the time services are performed, the Fresenius Group concludes that the consideration is variable (implicit price concession) and records the difference between the billed amount and the amount estimated to be collectible as a reduction to healthcare services revenue. Implicit price concessions include such items as amounts due from patients without adequate insurance coverage and patient co-payment and deductible amounts due from patients with healthcare coverage. The Fresenius Group determines implicit price concessions primarily upon past collection history.

Revenue from services is recognized on the date the service is performed. At this point of time, the payor is obliged to pay for the services performed.

Revenue from product sales is recognized when the customer obtains control of the product, either after possession is transferred or upon installation and provision of the necessary technical instructions or at another point in time that better defines transfer of control.

A portion of revenues is generated from contracts which on the one hand give the customer the right to use dialysis machines and on the other hand provide the customer with disposables and services. In this case, the transaction price is allocated in accordance with IFRS 15, and revenue is recognized separately for the lease and the non-lease components of the contract in accordance with IFRS 16 and IFRS 15, respectively.

Fresenius Vamed has performance obligations from long-term production contracts that are satisfied over time. Revenue is recognized according to progress towards completion. This progress towards completion of the performance obligation is measured based on the costs incurred in relation to expected total costs of fulfilling the contract, contractually defined milestones or performance completed to date whichever better reflects the progress towards completion of the performance obligation.

IFRS 15 does not apply to lease and insurance contracts. Revenue from leasing components and insurance contracts is determined according to IFRS 16 and IFRS 4, respectively.

Revenue is reported net of sales tax.

f) Government grants

The Fresenius Group primarily receives governmental funding for hospitals in Germany to finance buildings and medical equipment. Public sector grants are not recognized until there is reasonable assurance that the respective conditions are met and the grants will be received. Initially, the grant related to assets is recorded as a liability and as soon as the asset is acquired, the grant is offset against the acquisition costs. Grants related to income are recognized in other operating income in the period in which the related costs are incurred. For information regarding COVID-19 related government grants, please see note 13, Impacts of the COVID-19 pandemic.

g) Research and development expenses

Research is the independent and planned investigation undertaken with the prospect of gaining new scientific or technical knowledge and understanding. Development is the technical and commercial implementation of research results and occurs before the start of the commercial production or use. The research and development phase of pharmaceutical products normally ends with the regulatory approval by the relevant authorities on the market of the particular country. Generally, a new pharmaceutical product is primarily approved in an established market, such as Europe, the United States, China and Japan.

Research expenses are expensed as incurred. Development expenses that meet all the criteria for the recognition of an intangible asset are capitalized (see note 1. III. n., Intangible assets with finite useful lives).

h) Impairment

The Fresenius Group reviews the carrying amounts of its property, plant and equipment, intangible assets and right-of-use assets as well as other non-current assets for impairment whenever events or changes in circumstances indicate that the carrying amount is higher than the asset's recoverable amount. The recoverable amount is the higher of the fair value less costs to sell and its value in use. The fair value less cost of disposal of an asset is estimated as its net realizable value. The value in use is the present value of future cash flows expected to be derived from the relevant asset. If it is not possible to estimate the future cash flows from the individual assets, impairment is tested on the basis of corresponding cash generating units.

Impairment losses, except impairment losses recognized on goodwill, are reversed if there are indications that the reasons for impairment no longer exist and there has been a change in the estimates used to determine the asset's recoverable amount. This reversal shall not exceed the carrying amount that would have been determined had no impairment loss been recognized before.

Assets held for sale are reported at the lower of their carrying amount and fair value less costs to sell and depreciation is ceased.

i) Capitalized interest

The Fresenius Group includes capitalized interest as part of the cost of the asset if it is directly attributable to the acquisition, construction or manufacture of qualifying assets. For the fiscal years 2022 and 2021, interest of €2 million and €7 million, respectively, based on an average interest rate of 4.20% and 2.40%, respectively, was recognized as a component of the cost of assets.

j) Income taxes

Current taxes are calculated based on the earnings of the fiscal year and in accordance with local tax rules of the respective tax jurisdictions. Expected and executed additional tax payments and tax refunds for prior years are also taken into account.

Deferred tax assets and liabilities are recognized for the future consequences attributable to temporary differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis. Furthermore, deferred taxes are recognized on certain consolidation adjustments which affect net income attributable to shareholders of Fresenius SE & Co. KGaA. Deferred tax assets also include claims for tax reductions which arise from the probable expected use of existing tax losses carryforwards. The recognition of deferred tax assets from net operating losses and their utilization is based on the budget planning of the Fresenius Group and implemented tax strategies.

Deferred tax assets and liabilities are measured at the tax rates that are expected to apply to the period when the asset is realized or the liability is settled, based on tax rates that have been enacted or substantially enacted by the end of the reporting period.

A change in tax rate for the calculation of deferred tax assets and liabilities is recognized in the period the new laws are enacted or substantively enacted. The effects of the adjustment are generally recognized in the income statement. The effects of the adjustment are recognized in equity, if the temporary differences are related to items directly recognized in equity.

The realizability of the carrying amount of a deferred tax asset is reviewed at each date of the statement of financial position. In assessing the realizability of deferred tax assets, the Management considers to which extent it is probable that the deferred tax asset will be realized. The ultimate realization of deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences and tax loss carryforwards become deductible. The Management considers the expected reversal of deferred tax liabilities and projected future taxable income in making this assessment.

Deferred tax assets are recognized to the extent it is probable that sufficient taxable income will be available for the utilization of parts or of the entire deferred tax asset.

The Fresenius Group recognizes assets and liabilities for uncertain tax treatments to the extent it is probable the tax will be recovered or that the tax will be payable, respectively. In North America and Germany, interest and penalties related to income taxes, including uncertain tax treatments, do not meet the definition of income taxes, and therefore are accounted for under IAS 37. All other jurisdictions account for interest and penalties related to income taxes in accordance with local tax rules of the respective tax jurisdiction either under IAS 37 or as income tax expense under IAS 12.

The Fresenius Group is subject to ongoing and future tax audits in the United States, Germany and other jurisdictions. Different interpretations of tax laws, particularly due to the Fresenius Group's international activities, may lead to potential additional tax payments or tax refunds for prior years. To consider income tax liabilities or income tax receivables, Management's estimates are based on experiences with previous tax audits and local tax rules of the respective tax jurisdiction and the interpretation of such. Differences between actual results and Management's estimates or future changes in these estimates may have an impact on future tax payments or tax refunds. Estimates are revised in the period in which there is sufficient evidence to revise the assumptions.

k) Earnings per share

Basic earnings per share are computed by dividing net income attributable to shareholders of Fresenius SE & Co. KGaA by the weighted average number of ordinary shares outstanding during the year. Diluted earnings per share include the effect of all potentially dilutive instruments on ordinary shares that would have been outstanding during the fiscal year. The equity-settled awards granted under Fresenius' and Fresenius Medical Care's stock option plans can result in a dilutive effect.

l) Inventories

Inventories are comprised of all assets which are held for sale in the ordinary course of business (finished goods), in the process of production for such sale (work in process) or consumed in the production process or in the rendering of services (raw materials and purchased components).

Inventories are measured at the lower of acquisition and manufacturing cost (determined by using the average or first-in, first-out method) or net realizable value. Manufacturing costs are comprised of direct costs, production and material overhead, including depreciation charges.

m) Property, plant and equipment

Property, plant and equipment are stated at acquisition and manufacturing cost less accumulated depreciation. Repairs and maintenance costs are recognized in profit and loss as incurred. The costs for the replacement of components or the general overhaul of property, plant and equipment are recognized, if it is probable that future economic benefits will flow to the Fresenius Group and these costs can be measured reliably. Depreciation on property, plant and equipment is calculated using the straight-line method over the estimated useful lives of the assets ranging from 3 to 50 years for buildings and improvements (with a weighted average life of 16 years) and 2 to 15 years for machinery and equipment (with a weighted average life of 11 years).

n) Intangible assets with finite useful lives

Intangible assets with finite useful lives, such as patents, product and distribution rights, customer relationships, non-compete agreements, technology as well as licenses to manufacture, distribute and sell pharmaceutical drugs are recognized and reported apart from goodwill and are amortized using the straight-line method over their respective useful lives to their residual values and reviewed for impairment (see note 1. III. h, Impairment). Patient relationships however are not reported as separate intangible assets due to the missing contractual basis but are part of goodwill. The useful lives of patents, product and distribution rights range from 5 to 20 years, the average useful life is 13 years. The useful lives of customer relationships vary from 10 to 30 years, the average useful life is 18 years. Non-compete agreements with finite useful lives have useful lives ranging from 3 to 25 years with an average useful life of 7 years. Technology is amortized over a finite useful live of 15 years. Licenses to manufacture, distribute and sell pharmaceutical drugs are amortized over the contractual license period. All other intangible assets are amortized over their individual estimated useful lives between 3 and 15 years.

Losses in value of a lasting nature are recorded as an impairment and are reversed if there are indications that the reasons for impairment no longer exist and there has been a change in the estimates used to determine the asset's recoverable amount. This reversal shall not exceed the carrying amount that would have been determined had no impairment loss been recognized before.

Development costs are capitalized as manufacturing costs when the recognition criteria are met.

Fresenius Medical Care's development costs are primarily development projects related to dialysis machines and peritoneal dialysis cyclers. Such costs are capitalized when Fresenius Medical Care's commitment to finalize the project has been formalized and approved by management, the design input of the project or machine has been finalized and, based on experience with similar projects, Fresenius Medical Care has determined that technical feasibility has been achieved and future economic benefits are probable. The useful lives of capitalized development costs vary from 5 to 20 years, the average useful life is 7 years.

Fresenius Kabi capitalizes development costs as soon as the registration of a new product is very likely. This mainly applies if a product is already approved on an established market. Costs are amortized on a straight-line basis over the expected useful lives. In 2022, impairments were recorded (see note 7, Research and development expenses).

o) Goodwill and other intangible assets with indefinite useful lives

The Fresenius Group identified intangible assets with indefinite useful lives because, based on an analysis of all of the relevant factors, there is no foreseeable limit to the period over which those assets are expected to generate net cash inflows for the Group. The identified intangible assets with indefinite useful lives such as tradenames acquired in a purchase method business combination are recognized and reported apart from goodwill. They are recorded at fair value at acquisition.

Generally, adjustments made to the fair value of identifiable assets and liabilities subsequent to the final purchase price allocation are recognized immediately in the consolidated statement of income.

Goodwill and intangible assets with indefinite useful lives are not amortized but tested for impairment annually or when an event becomes known that could trigger an impairment (impairment test).

To perform the annual impairment test of goodwill, the Fresenius Group identified several cash generating units (CGUs) and determined the carrying amount of each CGU by assigning the assets and liabilities, including corporate assets, the existing goodwill and intangible assets, to those CGUs. A CGU is usually defined one level below the segment level based on regions or the nature of the business activity.

Four CGUs were identified in the segments Fresenius Medical Care and Fresenius Kabi, respectively (Europe (Fresenius Medical Care: EMEA), Latin America, Asia-Pacific and North America). According to the organizational structure, the segment Fresenius Helios consists of three CGUs, Germany, Spain and Fertility. The segment Fresenius Vamed consists of two CGUs (Project business and Service business). At least once a year, the Fresenius Group compares the value in use of each CGU to the CGU's carrying amount. The recoverable amount as its value in use of a CGU is determined using a discounted cash flow approach based upon the cash flow expected to be generated by the CGU. In case that the value in use of the CGU is less than its carrying amount and the fair value less cost of disposal is not estimated to be higher than the value in use, the difference is recorded as an impairment of the carrying amount of the CGU goodwill.

To evaluate the recoverability of intangible assets with indefinite useful lives, the Fresenius Group compares the recoverable amounts of the smallest identifiable group of assets that generate largely independent cash inflows with their carrying values. An intangible asset's fair value is determined using a discounted cash flow approach or other methods, if appropriate.

The annual impairment assessments have not resulted in any indications of impairment in 2022 and 2021.

In the fiscal year 2023, Fresenius Medical Care and Fresenius Kabi have each introduced a new global operating model as result of the new organizational structures. Thereafter, Fresenius Medical Care has reorganized the businesses into two global CGUs: Care Enablement and Care Delivery and Fresenius Kabi into four CGUs: Pharma GX & IV, Biopharma, Nutrition and MedTech.

p) Leases

A lease is defined as a contract that conveys the right to use an underlying asset for a period of time in exchange for consideration.

The Fresenius Group decided not to apply the guidance within IFRS 16 to leases with a total maximum term of twelve months (short-term leases) and leases for underlying assets of low value. These leases are exempt from balance sheet recognition and lease payments will be recognized as expenses over the lease term.

IFRS 16 is not applied to leases of intangible assets.

Lease liabilities

Lease liabilities are recognized at the present value of the following payments:

- fixed lease payments (including in-substance fixed payments), less any lease incentives receivable,
- variable lease payments, that are linked to an index or interest rate,
- expected payments under residual value guarantees,
- the exercise price of purchase options, where exercise is reasonably certain,
- lease payments in optional renewal periods, where exercise of extension options is reasonably certain, and
- penalty payments for the termination of a lease, if the lease term reflects the exercise of the respective termination option.

IFRS 16 requires the Fresenius Group to make judgments that affect the valuation of lease liabilities as well as right-of-use assets, including the determination of which contracts are within the scope of IFRS 16, identifying the contract lease term and determining the incremental borrowing rate. With the "reasonably certain" assessments, the Fresenius Group determines if and which future costs based on extension and/or termination options have to be included in the lease liabilities. During these assessments, the Fresenius Group considers all relevant facts and circumstances that create an economic incentive for the Fresenius Group to exercise, or not to exercise, an option, including any expected changes in facts and circumstances (e.g., contract-, object-, entity- or market-specific factors) from the commencement date until the exercise date of the option. Additionally, the Fresenius Group's historical practice regarding the period over which it has typically used particular types of assets, and its economic reasons for doing so, is also relevant. Unrecognized extension options are shown as potential future cash outflows (see note 31, Leases).

Lease payments are discounted using the implicit interest rate underlying the lease if this rate can be readily determined. Otherwise, the incremental borrowing rate of the lessee is used as the discount rate.

Lease liabilities are subsequently measured at amortised cost using the effective interest method. Furthermore, lease liabilities may be remeasured due to lease modifications or reassessments of the lease.

The incremental borrowing rate is determined when the Fresenius Group initiates a lease contract or changes an existing lease. The interest rate is calculated based on the following components: available interest rate sampling points, group risk margins, shadow rating (credit risk) margins, country risk margins, handling margins and other risk margins.

For lease contracts that include both lease and non-lease components that are not separable from lease components, no allocation is performed. Each lease component and any associated non-lease components are accounted for as a single lease. If the lease contracts include the lease and non-lease costs separately, the lease contract costs are divided into lease and non-lease components.

Right-of-use assets

Right-of-use asset are stated at cost, which comprises of:

- lease liability amount,
- initial direct costs incurred when entering into the lease,
- (lease) payments before commencement date of the respective lease, and
- an estimate of costs to dismantle and remove the underlying asset,
- less any lease incentives received.

Right-of-use assets are depreciated over the shorter of the lease term or the useful life of the underlying asset using the straight-line method. Where a lease agreement includes a transfer of ownership at the end of the lease term or the exercise of a purchase option is deemed reasonably certain, right-of-use assets are depreciated over the useful life of the underlying asset using the straight-line method. In addition, right-of-use assets are reduced by impairment losses, if any, and adjusted for certain remeasurements.

Right-of-use assets from lease contracts are classified in accordance with the Fresenius Group's classification of property plant and equipment:

- Right-of-use assets: land
- Right-of-use assets: buildings and improvements
- Right-of-use assets: machinery and equipment

In addition to the right-of-use asset categories above, advanced payments on right-of-use assets are presented separately. Right-of-use assets from lease contracts and lease liabilities are presented separately from property, plant and equipment and other financial debt in the consolidated statement of financial position.

q) Financial instruments

A financial instrument is any contract that gives rise to a financial asset of one entity and a financial liability or equity instrument of another entity.

Purchases and sales of financial assets are recognized or derecognized on the trading date. Furthermore, the Fresenius Group does not make use of the fair value option, which allows financial liabilities to be classified at fair value through profit or loss upon initial recognition. The Fresenius Group elects to represent changes in the fair value of selected equity investments that are not held for trading in other comprehensive income (loss).

Financial instruments are allocated to categories following the analysis of the business model and cash flow characteristics as required by IFRS 9, Financial Instruments. The following categories are relevant for the Fresenius Group: financial assets and liabilities measured at amortized cost, financial assets and liabilities measured at fair value through profit and loss and financial assets measured at fair value through other comprehensive income (loss). The reconciliation of the categories to the positions in the consolidated statement of financial position is shown in tabular form in note 32, Financial instruments.

Cash and cash equivalents

Cash and cash equivalents comprise cash funds and all short-term investments with maturities of up to three months. Short-term investments are highly liquid and readily convertible into known amounts of cash. The risk of changes in value is insignificant.

Trade accounts and other receivables

Trade accounts and other receivables are stated at their nominal value less lifetime expected credit losses.

Impairments

According to IFRS 9, impairments are recognized on the basis of expected credit losses (expected credit loss model). The Fresenius Group recognizes a loss allowance for expected credit losses on financial assets measured at amortized cost, contract assets and lease receivables as well as for investments in debt instruments measured at fair value through other comprehensive income.

The Fresenius Group recognizes loss allowances for expected credit losses (allowance for doubtful accounts) mainly for trade accounts receivable and cash and cash equivalents. The amount of expected credit losses is updated at each reporting date to reflect changes in credit risk since initial recognition of the respective instrument.

For trade accounts receivable, the Fresenius Group uses the simplified method which requires recognizing lifetime expected credit losses.

Expected credit losses on cash and cash equivalents are measured according to the general method based on IFRS 9. A significant increase in credit risk will be assessed based on available qualitative as well as quantitative information. Based on external credit ratings of the counterparties, the Fresenius Group considers that its cash and cash equivalents have a low credit risk.

The Fresenius Group does not expect any material credit losses from financial instruments that are measured according to the general approach.

The allowances are estimates comprised of customer and financial asset specific evaluations regarding payment history, current financial stability, and applicable future economic conditions.

Financial assets whose expected credit loss is not assessed individually are allocated to geographical regions. The impairment is generally assessed on the basis of regional macroeconomic indicators such as credit default swaps or scoring models.

Due to the number of transactions and geographical regions that the Fresenius Group operates in, the Fresenius Group's policy of determining when an individual expected credit loss is required considers the appropriate individual local facts and circumstances that apply to an account. While payment and collection practices vary significantly between countries and even agencies within one country, government payors usually represent low to moderate credit risks. It is the Fresenius Group's policy to determine when receivables should be classified as bad debt on a local basis taking into account local payment practices and local collection experience.

In case of objective evidence of a detrimental impact on the estimated future cash flows of a financial asset, the asset is considered to be credit impaired. This is generally the case after more than 360 days overdue, at the latest. When a counterpart defaults, all financial assets against this counterpart are considered impaired. The definition of default is mainly based on payment practices specific to individual regions and businesses.

For further information regarding impairments, please see note 1. IV. c, Allowances for expected credit losses.

Put option liabilities

The Fresenius Group, as option writer of existing put options, can be obligated to purchase noncontrolling interests held by third parties. If these put options were exercised, the Fresenius Group would be required to purchase all or part of the third-party owners' noncontrolling interests at the appraised fair value at the time of exercise. Put option liabilities are recognized at the present value of the redemption amount. The exercise price of the option is generally based on fair value and, in certain limited instances, might contain a fixed floor price.

To estimate the present value of the redemption amount of the Fresenius Medical Care put option liabilities, the greater of net book value or a multiple of earnings, based on historical earnings, the development stage of the underlying business and other factors, is used. From time to time the Fresenius Group engages external valuation firms for the valuation of the put options of Fresenius Medical Care. The external valuation estimates the fair values using a combination of discounted cash flows and a multiple of earnings and/or revenue. Under those limited circumstances in which the put option might contain a fixed floor price, the external valuation firm may assist the Fresenius Group with the valuation by performing a Monte Carlo Simulation analysis to simulate the exercise price. The put option liabilities are discounted at a pre-tax discount rate which reflects the interest effects and current market assessments of the time value of money and the specific risk of the liability.

The exercise price of the Fresenius Kabi put options is based on the fair value of mAbxience. A discounted cash flow valuation model is used to estimate its fair value. The estimated redemption amounts of the put options can also fluctuate and the discounted cash flows as well as the implicit multiple of earnings and/or revenue at which these obligations may ultimately be settled could vary significantly from Fresenius Group's current estimates depending on market conditions. For the purpose of analyzing the impact of changes in unobservable inputs on the fair value measurement of put option liabilities, please see note 32, Financial instruments.

Derivative financial instruments

Derivative financial instruments, which primarily include foreign currency forward contracts, are recognized at fair value as assets or liabilities in the consolidated statement of financial position. The effective portion of changes in fair value of cash flow hedges is recognized in accumulated other comprehensive income (loss) in shareholders' equity until the secured underlying transaction is realized (see note 32, Financial instruments). Based on the spot rate changes of hedged items and hedging instruments, the ineffective portion of cash flow hedges is recognized in current earnings. Changes in the fair value of derivatives that are not designated as hedging instruments are recognized in earnings.

Derivatives embedded in host contracts with a financial liability as host contract are accounted for as separate derivatives if their economic characteristics and risks are not closely related to those of the host contracts. These embedded derivatives are measured at fair value with changes in fair value recognized in the income statement.

r) Liabilities

At the date of the statement of financial position, liabilities are generally stated at amortized cost, with the exception of contingent considerations resulting from a business combination, put option liabilities as well as derivative financial liabilities.

s) Legal contingencies

In the ordinary course of Fresenius Group's operations, the Fresenius Group is party to litigation and arbitration and is subject to investigations relating to various aspects of its business. The Fresenius Group regularly analyzes current information about such claims for probable losses and provides accruals for such matters, including the estimated legal expenses and consulting services in connection with these matters, as appropriate. The Fresenius Group utilizes its internal legal department as well as external resources for these assessments. In making the decision regarding the need for a loss accrual, the Fresenius Group considers the degree of probability of an unfavorable outcome and its ability to make a reasonable estimate of the amount of loss.

The filing of a suit or formal assertion of a claim or assessment, or the disclosure of any such suit or assertion, does not necessarily indicate that accrual of a loss is appropriate.

t) Provisions

Accruals for other obligations are recognized when there is a present obligation to a third party arising from past events, it is probable that the obligation will be settled in the future and the amount can be reliably estimated.

Provisions for warranties and complaints are estimated based on historical experience.

Non-current provisions with a remaining period of more than one year are discounted to the present value of the expenditures expected to settle the obligation.

u) Pension liabilities and similar obligations

Pension obligations for post-employment benefits are measured in accordance with IAS 19 (revised 2011), Employee Benefits, using the projected unit credit method, taking into account future salary and trends for pension increase.

The Fresenius Group uses December 31 as the measurement date when measuring the deficit or surplus of all plans.

Net interest costs are calculated by multiplying the pension liability at the beginning of the year with the discount rate utilized in determining the benefit obligation. The pension liability results from the benefit obligation less the fair value of plan assets.

Remeasurements include actuarial gains and losses resulting from the evaluation of the defined benefit obligation as well as from the difference between actual return on plan assets and the expected return on plan assets at the beginning of the year used to calculate the net interest costs. In the event of a surplus for a defined benefit pension plan, remeasurements can also contain the effect from Asset Ceiling, as far as this effect is not included in net interest costs.

Remeasurements are recognized in accumulated other comprehensive income (loss) completely. It is not allowed to reclassify the remeasurements in subsequent periods. Components of net periodic benefit cost are recognized in profit and loss of the period.

v) Debt issuance costs

Debt issuance costs related to a recognized debt liability are presented in the consolidated statement of financial position as a direct deduction from the carrying amount of that debt liability. Debt issuance costs related to undrawn credit facilities are presented in other assets. These costs are amortized over the term of the related obligation or credit facility.

w) Share-based compensation plans

The Fresenius Group measures its share-based compensation plans in accordance with IFRS 2, Share-based Payments.

The total cost of stock options granted to members of the Management Board and executive employees of the Fresenius Group at the grant date were measured using an option pricing model and are recognized as expense over the vesting period of the stock option plans.

The measurement date fair value of cash-settled phantom stocks granted to members of the Management Board and executive employees of the Fresenius Group (except for Fresenius Medical Care) and of cash-settled performance shares granted to members of the Management Board and executive employees of the Fresenius Group is calculated using the Monte Carlo simulation. The corresponding liability based on the measurement date fair value is accrued over the vesting period of the phantom stock and performance share plans.

The measurement date fair value of cash-settled phantom stocks granted to members of the Management Board and executive employees of Fresenius Medical Care is calculated using a binomial model. The corresponding liability based on the measurement date fair value is accrued over the vesting period of the phantom stock plans.

x) Self-insurance programs

Under the insurance programs for professional, product and general liability, auto liability, worker's compensation claims and medical malpractice claims, the largest subsidiary of Fresenius Medical Care AG & Co. KGaA (FMC-AG & Co. KGaA), located in the United States, is partially self-insured for professional liability claims. For all other coverage, FMC-AG & Co. KGaA assumes responsibility for incurred claims up to predetermined amounts, above which third party insurance applies. Reported liabilities for the year represent estimated future payments of the anticipated expense for claims incurred (both reported and incurred but not reported) based on historical experience and existing claim activity. This experience includes both the rate of claims incidence (number) and claim severity (cost) and is combined with individual claim expectations to estimate the reported amounts.

y) Foreign currency translation

The reporting and functional currency is the euro. Substantially all assets and liabilities of the foreign subsidiaries that use a functional currency other than the euro are translated at year-end exchange rates, while income and expense are translated at annual average exchange rates of the fiscal year. Adjustments due to foreign currency translation fluctuations are excluded from net earnings and are reported in accumulated other comprehensive income (loss). In addition, the translation adjustments of certain intercompany borrowings, which are of a long-term nature, are also reported in accumulated other comprehensive income (loss). Transactions in foreign currencies recorded by subsidiaries are accounted for at the prevailing spot rate on the date of the respective transaction. Foreign exchange gains and losses resulting from the settlement of such transactions are generally recognized in profit and loss. Financial instruments denominated in a foreign currency are revalued at the spot rate as of the date of the consolidated statement of financial position. On the disposal of a foreign operation, all of the foreign currency translation differences accumulated in respect of that disposed operation are reclassified to the consolidated statement of income. On a partial disposal of a subsidiary that includes a foreign operation that does not result in the loss of control over the subsidiary, the proportionate share of accumulated foreign currency translation differences is re-attributed to noncontrolling interests.

The exchange rates of the main currencies affecting foreign currency translation developed as follows:

	Year-end exchange rate		Average exchange rate	
	December 31, 2022	December 31, 2021	**2022**	2021
U.S. dollar per €	1.067	1.133	1.053	1.183
Chinese renminbi per €	7.358	7.195	7.079	7.628
Argentinean peso per €	189.201	116.780	137.041	112.522
Australian dollar per €	1.569	1.562	1.517	1.575
Brazilian real per €	5.639	6.310	5.440	6.378
Japanese yen per €	140.660	130.380	138.027	129.877
Korean won per €	1,344.090	1,346.380	1,358.073	1,354.057
Pound sterling per €	0.887	0.840	0.853	0.860
Russian ruble per €	78.138	85.300	73.365	87.153
Swedish krona per €	11.122	10.250	10.630	10.146

z) Fair value hierarchy

The three-tier fair value hierarchy as defined in IFRS 13, Fair Value Measurement, classifies financial assets and liabilities recognized at fair value based on the inputs used in estimating the fair value. Level 1 is defined as observable inputs, such as quoted prices in active markets. Level 2 is in application of recognized financial mathematical models defined as inputs other than quoted prices in active markets that are directly or indirectly observable. Level 3 is defined as unobservable inputs for which little or no market data exists, therefore requiring the company to develop its own assumptions. The three-tier fair value hierarchy is used in note 32, Financial instruments.

aa) Use of estimates

The preparation of consolidated financial statements in conformity with IFRS requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the consolidated financial statements and the reported amounts of income and expenses during the reporting period. Actual results could differ from those estimates. Estimates and judgmental assumptions are required in particular for the positions trade accounts receivable, deferred tax assets and pension liabilities as well as put option liabilities, contingent payments outstanding for acquisitions, equity investments and when examining the recoverability of goodwill.

bb) Receivables management

The entities of the Fresenius Group perform ongoing evaluations of the financial situation of their customers and generally do not require a collateral from the customers for the supply of products and provision of services. Approximately 12% and 13% of Fresenius Group's revenues were earned and subject to the regulations under governmental healthcare programs, Medicare and Medicaid, administered by the United States government in 2022 and 2021, respectively.

cc) Recent pronouncements, applied

The Fresenius Group has prepared its consolidated financial statements at and for the year ended December 31, 2022 in conformity with IFRS, as adopted by the EU, that must be applied for fiscal years beginning on January 1, 2022.

For the year ended December 31, 2022, there were no recently implemented accounting pronouncements that had a material effect on the Fresenius Group's consolidated financial statements.

dd) Recent pronouncements, not yet applied

The International Accounting Standards Board (IASB) issued the following new standards relevant for the Fresenius Group and mandatory for fiscal years commencing on or after January 1, 2023:

IAS 1

In January 2020, the IASB issued **Amendments to IAS 1, Classification of Liabilities as Current and Non-current**. The amendments clarify under which circumstances debt and other liabilities with an uncertain settlement date should be classified as current or non-current. Among others, the amendments state that liabilities shall be classified depending on rights that exist at the end of the reporting period and define under which conditions liabilities might be settled by cash, other economic resources or equity. On July 15, 2020, and October 31, 2022, the IASB deferred the effective date. The amendments to IAS 1 are now effective for fiscal years beginning on or after January 1, 2024. Earlier adoption is permitted. The Fresenius Group is currently evaluating the impact of the amendments to IAS 1 on the consolidated financial statements.

IFRS 17

In May 2017, the IASB issued **IFRS 17, Insurance Contracts.** In June 2020 and December 2021, further amendments were published. IFRS 17 establishes principles for the recognition, measurement, presentation and disclosure related to the issuance of insurance contracts. IFRS 17 replaces IFRS 4, Insurance Contracts, which was brought in as an interim standard in 2004. IFRS 4 permitted the use of national accounting standards for the accounting of insurance contracts under IFRS. As a result of the varied application for insurance contracts, there was a lack of comparability among peer groups. IFRS 17 eliminates this diversity in practice by requiring all insurance contracts to be accounted for using updated estimates and assumptions that reflect the timing of cash flows and any uncertainty relating to insurance contracts.

The Fresenius Group does not expect that IFRS 17 will have a material impact on its consolidated financial statements.

Based on an assessment performed during 2022, the Fresenius Group believes that the premium allocation approach under IFRS 17 is the most appropriate measurement model. On initial recognition of the liability for incurred claims, the estimation and valuation process remains unchanged as compared to the application of IFRS 4. Regarding the measurement of the liability for the remaining coverage, the liability is equal to the premiums received less any insurance acquisition cash flows. The Fresenius Group does not consider the effects and time value of money when measuring the liability for the remaining coverage, as the related cash flow is expected to be paid or received in one year or less from the date the claims are incurred. The Fresenius Group will apply the modified retrospective approach at the transition. Insurance premium revenues are currently recognized based on the passage of time, therefore the pattern of revenue recognition will not change upon the application of IFRS 17.

On June 25, 2020, the IASB issued amendments to IFRS 17, which among others, defer the effective date to fiscal years beginning on or after January 1, 2023. Earlier adoption is permitted for entities that have also adopted IFRS 9, Financial Instruments, and IFRS 15, Revenue from Contracts with Customers.

The EU Commission's endorsement of the amendments to IAS 1 is still outstanding.

In the Fresenius Group's view, there are no other IFRS standards or interpretations not yet effective that would be expected to have a material impact on the consolidated financial statements.

ee) Impacts of the war in Ukraine on accounting

At the end of February 2022, Russia invaded Ukraine, triggering sanctions by various countries against Russia. The resulting uncertainties led to a further deterioration in the macroeconomic environment for the fiscal year 2022, resulting in accelerating inflationary developments, significantly increased energy costs, supply chain disruptions and capital market volatility. These developments, combined with complications in the labor market in particular in the United States faced by Fresenius Medical Care, had a negative impact on Fresenius Group's operations. The Fresenius Group continues to monitor the situation. As of December 31, 2022, the Fresenius Group's assets in Russia and Ukraine totaled less than 1% of Fresenius Group's total assets.

ff) Impacts of climate change on accounting

The Fresenius Group continually analyzes potential sustainability risks in the areas of climate change and water scarcity. In both areas, the Fresenius Group has not identified any significant risks for its business model. Therefore, the Fresenius Group does not currently expect any material impact of sustainability risks on the accounting in 2022.

IV. CRITICAL ACCOUNTING POLICIES

In the opinion of the Management of the Fresenius Group, the following accounting policies and topics are critical for the consolidated financial statements in the present economic environment. The influences and judgments as well as the uncertainties which affect them are also important factors to be considered when looking at present and future operating earnings of the Fresenius Group.

a) Recoverability of goodwill and intangible assets with indefinite useful lives

The amount of goodwill and other non-amortizable intangible assets with indefinite useful lives represents a considerable part of the total assets of the Fresenius Group. At December 31, 2022 and December 31, 2021, the carrying amount of these was €31,753 million and €29,220 million, respectively. This represented 42% and 41%, respectively, of total assets.

An impairment test of goodwill and non-amortizable intangible assets with indefinite useful lives is performed at least once a year, or if events occur or circumstances change that would indicate the carrying amount may not be recoverable.

To determine possible impairments of these assets, the recoverable amount as its value in use of the cash generating units (CGUs) is compared to their carrying amount and the fair value less cost of disposal. The value in use of each CGU is determined using estimated future cash flows for the unit discounted by a weighted average cost of capital (WACC) specific to that CGU. In 2022, the WACC was impacted by the worldwide prevailing increase of interest rates as well as the impact of increased macroeconomic uncertainties on country risk rates and other WACC parameters. Estimating the discounted future cash flows involves significant assumptions, especially regarding future reimbursement rates and sales prices, number of treatments, sales volumes and costs. In determining discounted cash flows, the Fresenius Group utilizes for every CGU its approved three-year budget, projections for years 4 to 10 and a corresponding growth rate for all remaining years. Projections for up to 10 years are possible due to historical experience and the stability of Fresenius Group's business, which is largely independent from the economic cycle.

As the market capitalization as of December 31, 2022 was below the Group's equity, a new impairment test was performed. For this additional impairment test, the WACC parameters were updated. The additional impairment test as of December 31, 2022 did not result in any impairment.

The following table shows the key assumptions of value-in-use calculations:

	Average revenue growth in ten year projection period (in %)		Average EBIT growth in ten year projection period (in %)		Residual value growth (in %)		After-tax WACC (in %)		Carrying amount of goodwill (€ in millions)	
	2022	2021	**2022**	2021	**2022**	2021	**2022**	2021	**2022**	2021
Fresenius Medical Care										
North America	mid-single-digit	mid-single-digit	high-single-digit	mid-single-digit	1.00	1.00	6,39	4.58	13,607	12,224
EMEA	mid-single-digit	mid-single-digit	high-single-digit	mid-single-digit	1.00	1.00	8,08	5.23	1,414	1,377
Asia-Pacific	mid-single-digit	mid-single-digit	mid-single-digit	mid-single-digit	1.00	4.00	6,38	4.91	764	756
Latin America	mid-single-digit	mid-single-digit	low-double-digit	low-double-digit	1.60	1.60	8.94 – 22.71	7.00 – 16.25	5	5
Fresenius Kabi										
North America	mid- to high-single digit	mid-single-digit	low-double-digit	high-single-digit	2.00	3.00	5.95	6.02	4,944	4,210
Europe	low-single-digit	mid-single-digit	low-double-digit	low-double-digit	2.00	3.00	6.27	6.08	617	529
Asia-Pacific	mid-single-digit	mid- to high-single digit	mid-single-digit	high-single-digit	2.00	3.00	6.03	5.99	525	514
Latin America	mid- to high-single digit	mid-single-digit	low-double-digit	mid-single-digit	2.00	3.00	7,31 – 10,46	7,47 – 10,28	175	120
Fresenius Helios										
Germany	low-single-digit	low-single-digit	mid-single-digit	low- to mid-single-digit	1.00	1.00	5.65	5.43	4,872	4,783
Spain	low-single-digit	low- to mid-single-digit	low-single-digit	low- to mid-single-digit	1.50	1.50	6.27	6.34	3,767	3,717
Fertility	mid-single-digit	high-single-digit	low-double-digit	low-double-digit	1.50	1.50	6.00	6.04	391	361
Fresenius Vamed										
Project business	high-single-digit	high-single-digit	low-double-digit	low-double-digit	1.00	1.00	5.78	5.60	18	18
Service business	mid-single-digit	mid-single-digit	low-single-digit	mid-single-digit	1.00	1.00	5.78	5.60	295	282

The discount factor is determined by the WACC of the respective CGU. Fresenius Medical Care's WACC consisted of a basic rate of 6.05% and the WACC in the the other business segments consisted of a basic rate of 5.65% for 2022. This basic rate is then adjusted by a country-specific risk premium and, if appropriate, by a factor to reflect higher risks associated with the cash flows from recent material acquisitions, until they are appropriately integrated, within each CGU.

If the value in use of the CGU is less than its carrying amount and the fair value less cost of disposal is not estimated to be higher than the value in use, the difference is recorded as an impairment of the CGU goodwill.

In 2022 and 2021, no impairment was recognized. An increase of the WACC (after tax) by 0.5 percentage points would not have resulted in the recognition of an impairment loss in 2022.

A prolonged downturn in the healthcare industry with lower than expected increases in reimbursement rates and prices and/or higher than expected costs for providing healthcare services and for procuring and selling health care products or a significant increase of mortality of patients with chronic kidney diseases which may be attributable to COVID-19 have and could continue to adversely affect the estimated future cash flows of certain countries or segments. Future adverse changes in a reporting unit's economic environment could affect the discount rate. A decrease in the estimated future cash flows and/or a decline in the reporting unit's economic environment could result in impairment charges to goodwill and other intangible assets with indefinite useful lives which could materially and adversely affect Fresenius Group's future operating results.

The following table shows the changes in the key assumptions that would result in the recoverable amount for the mentioned CGUs being equal to the carrying amount:

SENSITIVITY ANALYSIS

Change in percentage points	After-tax WACC	Operating income margin of each projection year
Fresenius Medical Care		
CGU North America	0.56	-0.97
CGU EMEA	1.56	-2.50
Fresenius Kabi		
CGU Europe	1.36	-1.46
Fresenius Helios		
CGU Spain	1,27	-2,99

The recoverable amount of the CGU Fresenius Medical Care North America and the CGU Fresenius Medical Care EMEA exceeded the carrying amount by €2,451 million and €1,071 million, respectively as of December 31, 2022. The recoverable amount of the CGUs Fresenius Kabi Europe and Fresenius Helios Spain exceeded the carrying amount by €1,122 million and €2,386 million, respectively.

b) Legal contingencies

The Fresenius Group is involved in several legal matters arising from the ordinary course of its business. The outcome of these matters may have a material adverse effect on the financial position, results of operations or cash flows of the Fresenius Group. For details, please see note 30, Commitments and contingencies.

The Fresenius Group regularly analyzes current information about such claims for probable losses and provides accruals for such matters, including the estimated legal expenses and consulting services in connection with these matters, as appropriate. The Fresenius Group utilizes its internal legal department as well as external resources for these assessments. In making the decision regarding the need for a provision for legal matters, the Fresenius Group considers the degree of probability of an unfavorable outcome and its ability to make a reasonable estimate of the amount of loss.

The filing of a suit or formal assertion of a claim or assessment, or the disclosure of any such suit or assertion, does not necessarily indicate that a provision for a loss is appropriate.

c) Allowances for expected credit losses

Trade accounts receivable are a significant asset and the allowances for expected credit losses are a significant estimate made by the local Management. Trade accounts receivable were €7,008 million and €7,045 million in 2022 and 2021, respectively, net of allowance. Approximately 51% and 48%, respectively, of receivables derive from the business segment Fresenius Medical Care and mainly relate to the dialysis care business in North America.

The major debtors or debtor groups of trade accounts receivable were U.S. Medicare and Medicaid healthcare programs with 16%, private insurers in the United States with 9%, statutory health insurers in Germany with 8% as well as the public health authority of the region of Madrid with 10%, at December 31, 2022. Other than that, the Fresenius Group has no significant risk concentration, due to its international and heterogeneous customer structure.

The allowances for expected credit losses were €472 million and €449 million as of December 31, 2022 and December 31, 2021, respectively. A valuation allowance is calculated if specific circumstances indicate that amounts will not be collectible. When all efforts to collect a receivable, including the use of outside sources where required and allowed, have been exhausted, and after appropriate review by the local management, a receivable deemed to be uncollectible is considered a bad debt and written off.

Deterioration in the aging of receivables and collection difficulties could require that the Fresenius Group increases the estimates of allowances for expected credit losses. Additional expenses for uncollectible receivables could have a significant negative impact on future operating results.

d) Self-insurance programs

Under the insurance programs for professional, product and general liability, auto liability, worker's compensation claims and medical malpractice claims, the largest subsidiary of Fresenius Medical Care AG & Co. KGaA, located in the United States, is partially self-insured for professional liability claims. For further details regarding the accounting policies for self-insurance programs, please see note 1. III. x, Self-insurance programs.

2. ACQUISITIONS, DIVESTITURES AND INVESTMENTS

ACQUISITIONS, DIVESTITURES AND INVESTMENTS

The Fresenius Group made acquisitions, investments and purchases of intangible assets of €1,579 million and €1,085 million in 2022 and 2021, respectively. In 2022, of this amount, €977 million was paid in cash and €602 million was assumed obligations.

Fresenius Medical Care

In 2022, Fresenius Medical Care spent €746 million on acquisitions, mainly on the business combination of InterWell Health as well as the purchase of dialysis clinics.

Business combination of InterWell Health

On August 24, 2022 (acquisition date), Fresenius Medical Care completed a business combination among Fresenius Health Partners, Inc. (FHP), the value-based care division of Fresenius Medical Care's wholly owned subsidiary Fresenius Medical Care Holdings, Inc., with InterWell Health LLC, a physician organization driving innovation in the kidney care space in the United States, and Cricket Health, Inc., a U.S. provider of value-based kidney care with a patient engagement and data platform. The transaction was completed after regulatory approval was received in the United States and other customary closing conditions were satisfied. The new company, InterWell Topco L.P. (NewCo), will operate under the InterWell Health brand.

This business combination was conducted as a non-cash transaction. Under the terms and conditions of this business combination, Cricket Health, Inc. contributed all of its net assets in exchange for approximately 17% of the equity interest in NewCo. The fair value of the consideration transferred by Fresenius Medical Care to Cricket Health, Inc. for a controlling interest in NewCo was US$261 million (€263 million as of the acquisition date).

InterWell Health LLC also contributed all of its net assets in exchange for approximately 8% of the equity interest in NewCo. The fair value of the consideration transferred by Fresenius Medical Care to InterWell Health LLC for a controlling interest in NewCo was US$138 million (€138 million as of the acquisition date). Prior to the transaction, Fresenius Medical Care owned approximately 46% of InterWell Health LLC with a carrying value of US$19 million (€19 million) and a fair value of US$176 million (€177 million) as of the acquisition date. At the acquisition date, Fresenius Medical Care received approximately 7% equity in NewCo in exchange for its investment in InterWell Health, LLC. As a result of the transaction, Fresenius Medical Care recognized a remeasurement gain of US$156 million (€148 million), which represented the difference between the fair value and the carrying value of its investment in InterWell Health LLC prior to the acquisition date, and a related currency translation adjustment reversal due to the disposal of its investment in InterWell Health LLC in the amount of €364 thousand. The remeasurement gain is recorded in the consolidated statement of income within other operating income.

The contributions of the net assets of InterWell Health LLC and Cricket Health, Inc. were accounted for as a business combination in accordance with IFRS 3 in which Fresenius Medical Care was identified as the acquirer and InterWell Health LLC and Cricket Health, Inc. were identified as acquired companies. NewCo has been consolidated in Fresenius Medical Care's consolidated financial statements as of and for the year ended December 31, 2022.

As a result of the business combination, Fresenius Medical Care recorded noncontrolling interests at fair value in the amount of US$187 million (€188 million) using the full goodwill method within the line item noncontrolling interests due to changes in consolidation group in the consolidated statement of changes in equity. A third party valuation advisor was engaged to assist Fresenius Medical Care in the estimation of the underlying fair value of the transaction and primarily employed an income approach which was used in the calculation of consideration transferred to the acquirees as well as in the calculation of noncontrolling interests. In addition, Fresenius Medical Care also granted put options to noncontrolling shareholders with an estimated present value of the redemption amount of US$603 million (€566 million) at December 31, 2022 (at acquisition date: US$604 million (€608 million)). The fair value was determined on the basis of independent valuations.

Fresenius Medical Care also contributed the business of FHP in exchange for approximately 68% of equity interest in NewCo. Since Fresenius Medical Care controlled FHP before the acquisition date and controls NewCo post-acquisition date, Fresenius Medical Care's contribution of FHP net assets was recorded under common control at their respective carrying values at the acquisition date and the resulting reduction of Fresenius Medical Care's interest in FHP was accounted for as an equity transaction. Therefore, additional noncontrolling interest was recognized in the amount of US$5 million (€5 million as of acquisition date), partially offset by a related currency translation adjustment in the amount of €1 million, and additional paid in capital of US$393 million (€396 million as of the acquisition date) representing the difference between the carrying value and the fair value of the corresponding interests. These amounts were recorded within transactions with noncontrolling interests without loss of control in the consolidated statement of changes in equity.

Upon consummation of the business combination described above, Fresenius Medical Care holds approximately 75% of NewCo, resulting from the contribution of Fresenius Medical Care's interest in FHP and the transfer of the previously-held equity method investment in InterWell Health LLC. The former owners of Cricket Health, Inc. and InterWell Health LLC hold approximately 17% and 8%, respectively, as noncontrolling interests in NewCo.

The following allocation of the purchase price is based upon information available to management as of December 31, 2022. Based on a preliminary allocation, the following assets, including goodwill (which will not be deductible for tax purposes), were acquired and liabilities were assumed as of the acquisition date:

	US$ in millions	€ in millions
Fair values of assets acquired and liabilities assumed		
Cash and cash equivalents	57	58
Other assets	3	3
Intangible assets	54	54
Goodwill	660	664
Other liabilities	-13	-13
Noncontrolling interests	-187	-188
Transferred consideration	574	578
thereof fair value of consideration transferred of Fresenius Medical Care's interest in FHP	398	401
thereof fair value of previously held equity method investment in InterWell Health LLC	176	177

During the fourth quarter of 2022, Fresenius Medical Care updated the purchase price allocation as a result of obtaining additional information. The fair value of the consideration transferred to Cricket Health, Inc. and InterWell Health, LLC was reduced by US$8 million (€8 million) to reflect an updated capital interest allocation related to share-based compensation arrangements of Cricket Health, Inc. at the acquisition date. As such, the noncontrolling interests of Cricket Health, Inc. and InterWell Health, LLC in NewCo were reduced by US$7 million (€7 million). Additionally, management adjusted the underlying parameters utilized to value intangible assets acquired, which resulted in an increase of US$19 million (€20 million). Fresenius Medical Care also updated its tax analysis, specifically in the U.S. Deferred tax liabilities were adjusted by US$9 million (€9 million), which resulted in net deferred taxes of zero.

Fresenius Medical Care is in the process of obtaining and evaluating the information necessary for the purchase price allocation, including, but not limited to tax-related items and the final capital interest allocation. As such, the balances noted in the table above are provisional and subject to measurement period adjustments permitted under IFRS 3. Any adjustments to acquisition accounting, net of related income tax effects, will be recorded with a corresponding adjustment to goodwill within one year from the acquisition date.

As of the acquisition date, intangible assets in the amount of US$54 million (€54 million) acquired in this transaction consist primarily of a technology platform with a weighted average useful life of 10 years and a trade name with an indefinite useful life.

As of the acquisition date, goodwill in the amount of US$660 million (€664 million) was recorded as part of the transaction and mainly represents anticipated synergies and future cash flows expected to be generated by NewCo. The entire amount of goodwill recorded as a result of this transaction was allocated to the North America cash generating unit.

Additionally, and as contemplated in the agreement, Fresenius Medical Care also transferred Acumen Physician Solutions, LLC (Acumen) to NewCo shortly after the acquisition date, and prior to September 30, 2022, with working capital in the amount of US$2 million (€2 million as of the date of the transfer agreement). Since certain long-lived assets (mainly intangible assets) held by Acumen will be utilized materially differently by NewCo, management performed an impairment assessment prior to the transfer, concluded that the assets were completely impaired and recorded an impairment charge in the North America Segment in the amount of US$71 million before the transfer (€67 million). Fresenius Medical Care also incurred certain transaction-related costs of US$26 million (€24 million). The expenses, along with the impairment charges were recognized in general and administrative expenses in the consolidated statement of income.

From August 24, 2022 through December 31, 2022, the revenue contributed by the acquired companies (i.e. Cricket Health, Inc. and InterWell Health LLC) was not material. During this period, Fresenius Medical Care recognized a loss of €18 million from the acquired companies within its consolidated statement of income.

In 2021, Fresenius Medical Care spent €628 million on acquisitions, mainly on the purchase of dialysis clinics.

Fresenius Kabi

In 2022, Fresenius Kabi spent €734 million on acquisitions, mainly for the acquisition of a stake of 55% of mAbxience Holding S.L. and for the acquisition of 100% of the shares of Ivenix, Inc.

Acquisition mAbxience

On August 1, 2022, Fresenius Kabi closed the acquisition of a stake of 55% of mAbxience Holding S.L. (mAbxience), a leading international biopharmaceutical company, focused on the rapidly growing market for the development and manufacturing of biological drugs (biopharmaceuticals). The additional production capacities are expected to generate significant cost synergies in the longer term with regard to the company's own biosimilars portfolio. At the time of the acquisition, the company employed 734 staff and generated revenue of €252 million in 2021. mAbxience has been consolidated since August 1, 2022.

The consideration transferred in the amount of €511 million is a combination of €499 million upfront payment, which was paid in cash upon closing, and performance-based payments expected for future years with a current fair value of €12 million. These are strictly tied to the achievement of development and operating targets and could be in the low three-digit million euro range in total. The contractual provisions also include a put/call option scheme regarding the current owners' remaining shares in mAbxience (45%). The exercise price of the put/call options is based on fair values estimated by means of independent valuations. The fair value recognized was determined using a discounted cash flow model. A corresponding liability of €457 million was accounted for in the consolidated statement of financial position under other long-term liabilities.

The transaction was accounted for as a business combination. Noncontrolling interests were recognized at fair value using the full goodwill method and reported within the noncontrolling interests due to changes in consolidation group in the consolidated statement of changes in equity.

The following table summarizes the current estimated fair values of assets acquired and liabilities assumed at the date of the acquisition. The allocation of the purchase price is based on all information currently available to management. Due to the relatively short time frame between closing of the acquisition and the date of the statement of financial position, certain information may be incomplete. Any adjustments to acquisition accounting, net of related income tax effects, will be recorded with a corresponding adjustment to goodwill.

€ in millions

Fair values of assets acquired and liabilities assumed	
Cash and cash equivalents	6
Trade accounts and other receivables	24
Inventories	89
Other current assets	26
Property, plant and equipment	68
Intangible assets and other assets	413
Goodwill	464
Trade accounts payable, short-term provisions and other short-term liabilities	-41
Other liabilities	-120
Noncontrolling interests	-418
Transferred consideration	**511**

The goodwill in the amount of €464 million resulting from the acquisition is not deductible for tax purposes and is allocated to the four cash generating units of Fresenius Kabi according to the regional distribution of the acquired business.

Goodwill mainly represents the value of future opportunities arising from the acquisition of the biosimilars molecules and the related expansion of Fresenius Kabi's biosimilars platform as well as from expected cost synergies from the use of the acquired production capacities for the existing biosimilars portfolio.

Intangible assets mainly relate to the value of the acquired biosimilars molecules, some of which are still in development.

mAbxience has contributed €59 million to revenue and -€15 million to the operating income (EBIT) before special items of the Fresenius Group since August 1, 2022.

Acquisition Ivenix

On May 3, 2022, Fresenius Kabi completed the acquisition of 100% of the shares of Ivenix, Inc. (Ivenix), a specialized infusion therapy company. The cash purchase price amounts to US$240 million (€228 million). In addition, milestone payments with a current fair value in the low three-digit million euro range were recognized. These are strictly linked to the achievement of commercial and operating targets and could increase by a low three-digit million euro amount.

The transaction was accounted for as a business combination.

Based on the preliminary purchase price allocation, goodwill of US$199 million (€188 million) which is not deductible for tax purposes and an intangible asset of US$180 million (€171 million) were recorded in the initial statement of financial position.

The goodwill mainly represents the value of future opportunities arising from the additional growth potential, the profitability development planned as a result of the relocation of production, and the economies of scale in infusion therapy.

The intangible asset relates to the acquired technology.

In 2021, Fresenius Kabi spent €1 million on acquisitions, mainly for already planned acquisition related milestone payments relating to the acquisition of the biosimilars business.

Fresenius Helios

In 2022, Fresenius Helios spent €82 million on acquisitions, mainly for the purchase of an oncology clinic and an ophthalmology care center in Colombia as well as the acquisition of a clinic in Spain.

In 2021, Fresenius Helios spent €453 million on acquisitions, mainly for the purchase of the Eugin Group. Furthermore, subsequent purchase price payments for the Malteser hospital in Duisburg, Germany, were made and the DRK Kliniken Nordhessen in Kassel, Germany, were acquired. Moreover, Centro Oncológico de Antioquia S.A. and Clínica Clofán S.A. were acquired in Colombia.

Acquisition of the Eugin Group

On April 14, 2021, Fresenius Helios has finalized the complete acquisition of Luarmia S.L., Spain, holding company of all worldwide activities of the Eugin group, and of NMC Eugin US Corporation from NMC Health (together the Eugin Group), one of the leading international fertility groups. The purchase price is based on a valuation of €430 million. It includes acquired noncontrolling interests and debt of approximately €80 million. The noncontrolling interests are held by the respective senior doctors. The Eugin Group has been consolidated as of April 1, 2021.

Eugin Group's network comprised at the time of the acquisition 31 clinics and additional 34 sites across 9 countries on 3 continents. With about 1,300 employees, the company offers a wide spectrum of state-of-the-art services in the field of fertility treatments. With the acquisition of the Eugin Group, Fresenius Helios becomes a leading player in the dynamically growing market for fertility services and establishes a strong basis for further expansion.

The acquisition was financed through available cash and credit facilities. The purchase price was paid in cash.

The transaction was accounted for as a business combination whereby assets and liabilities and noncontrolling interests are recognized at their fair values.

Based on a purchase price allocation, intangible assets in the amount of €41 million and a goodwill of €348 million which is not deductible for tax purposes were recorded for the initial statement of financial position of the Eugin Group. Any adjustments to acquisition accounting, net of related income tax effects, will be recorded with a corresponding adjustment to goodwill. Goodwill mainly represents the market position of the acquired fertility hospitals and employee know-how.

Since January 1, 2022, the Eugin Group forms a new and separate Fresenius Helios business and reporting unit, Helios Fertility, alongside Helios Germany and Helios Spain.

In the year 2021, the Eugin Group has contributed €133 million to revenue and €19 million to the operating income (EBIT) of the Fresenius Group since April 1, 2021.

Fresenius Vamed

In 2022, Fresenius Vamed spent €17 million on acquisitions, mainly for the purchase of two rehabilitation clinics in Germany and one in the United Kingdom.

In 2021, Fresenius Vamed spent €1 million on acquisitions.

IMPACTS ON FRESENIUS GROUP'S CONSOLIDATED FINANCIAL STATEMENTS RESULTING FROM ACQUISITIONS

In the fiscal year 2022, all acquisitions have been accounted for applying the purchase method and accordingly have been consolidated starting at the date of acquisition. The excess of the total fair value of consideration paid over the fair value of the net assets acquired was €2,459 million and €1,402 million in 2022 and 2021, respectively. The measurement period adjustments from the previous year's acquisitions did not have a significant impact on the consolidated financial statements in 2022.

The purchase price allocations are not yet finalized for all acquisitions of the current year. Based on preliminary purchase price allocations, the recognized goodwill was €1,529 million and the other intangible assets were €930 million. Of this goodwill, €695 million is attributable to the acquisitions of Fresenius Medical Care, €653 million to the acquisitions of Fresenius Kabi, €167 million to the acquisitions of Fresenius Helios and €14 million to the acquisitions of Fresenius Vamed.

Goodwill is an asset representing the future economic benefits arising from other assets acquired in a business combination that are not individually identified and separately recognized. Goodwill arises principally due to the fair value placed on an established stream of future cash flows.

The acquisitions completed in 2022 or included in the consolidated financial statements for the first time for a full year contributed the following amounts to the development of revenue and earnings:

€ in millions	2022
Revenue	283
EBITDA	-43
EBIT	-72
Net interest	-9
Net income attributable to shareholders of Fresenius SE & Co. KGaA	-55

The acquisitions increased the total assets of the Fresenius Group by €2,353 million.

If the three major acquisitions (InterWell Health, mAbxience and Ivenix) had taken place on January 1, 2022, the Fresenius Group estimates that Group revenue would have been only slightly higher and net income attributable to shareholders of Fresenius SE & Co. KGaA almost unchanged.

NOTES ON THE CONSOLIDATED STATEMENT OF INCOME

3. SPECIAL ITEMS

Net income attributable to shareholders of Fresenius SE & Co. KGaA for the year 2022 in the amount of €1,372 million includes special items relating to the Fresenius cost and efficiency program (including the FME25 program), impacts related to the war in Ukraine, the remeasurement of the Humacyte investment, the net gain related to InterWell Health, transaction costs for mAbxience and Ivenix, hyperinflation Turkey, retroactive duties and the revaluation of biosimilars contingent purchase price liabilities.

The special items had the following impact on the consolidated statement of income of 2022:

€ in millions	EBIT	Interest expenses	Net income attributable to shareholders of Fresenius SE & Co. KGaA
Earnings 2022, before special items	**4,004**	**533**	**1,729**
Expenses associated with the Fresenius cost and efficiency program (including the FME25 program)	-466	–	-260
Impacts related to the war in Ukraine	-86	–	-43
Transaction costs mAbxience, Ivenix	-40	–	-27
Remeasurement Humacyte investment	-103	–	-24
Hyperinflation Turkey	-12	–	-9
Retroactive duties	-9	–	-8
Revaluations of biosimilars contingent purchase price liabilities	-23	-26	2
Net gain related to InterWell Health	56	–	12
Earnings 2022 according to IFRS	**3,321**	**507**	**1,372**

Net income attributable to shareholders of Fresenius SE & Co. KGaA for the year 2021 in the amount of €1,818 million included special items relating to the Fresenius cost and efficiency program (including the FME25 program) and the revaluation of biosimilars contingent purchase price liabilities.

The special items had the following impact on the consolidated statement of income of 2021:

€ in millions	EBIT	Interest expenses	Net income attributable to shareholders of Fresenius SE & Co. KGaA
Earnings 2021, before special items	**4,252**	**-504**	**1,867**
Expenses associated with the Fresenius cost and efficiency program (including the FME25 program)	-143	–	-82
Revaluations of biosimilars contingent purchase price liabilities	49	-2	33
Earnings 2021 according to IFRS	**4,158**	**-506**	**1,818**

4. REVENUE

Revenue by activity was as follows:

€ in millions	2022 Fresenius Medical Care	Fresenius Kabi	Fresenius Helios	Fresenius Vamed	Corporate	**Fresenius Group**
Revenue from contracts with customers	18,777	7,773	11,678	2,035	0	40,263
thereof revenue from services	14,967	85	11,666	1,404	0	28,122
thereof revenue from products and related services	3,810	7,678	–	–	–	11,488
thereof revenue from long-term production contracts	–	–	–	631	–	631
thereof further revenue from contracts with customers	–	10	12	–	–	22
Other revenue	555	6	12	4	–	577
Revenue	**19,332**	**7,779**	**11,690**	**2,039**	**0**	**40,840**

€ in millions	2021 Fresenius Medical Care	Fresenius Kabi	Fresenius Helios	Fresenius Vamed	Corporate	**Fresenius Group**
Revenue from contracts with customers	17,054	7,123	10,850	1,956	2	36,985
thereof revenue from services	13,479	59	10,839	1,283	2	25,662
thereof revenue from products and related services	3,575	7,052	–	–	–	10,627
thereof revenue from long-term production contracts	–	–	–	673	–	673
thereof further revenue from contracts with customers	–	12	11	–	–	23
Other revenue	516	3	12	4	–	535
Revenue	**17,570**	**7,126**	**10,862**	**1,960**	**2**	**37,520**

Other revenue includes revenue from insurance and lease contracts.

At December 31, 2022, revenue recognized that was included in the contract liabilities balance at the beginning of the period was €492 million (2021: €603 million).

As of December 31, 2022 and 2021, respectively, the Fresenius Group had performance obligations that are unsatisfied or partially unsatisfied and that are expected to be satisfied and recorded in revenue in the following years.

December 31, 2022, € in millions	2023	2024	2025	2026	2027	thereafter	**Total**
Transaction price of the unsatisfied or partially unsatisfied performance obligations	1,439	1,161	991	1,111	287	295	**5,284**

December 31, 2021, € in millions	2022	2023	2024	2025	2026	thereafter	**Total**
Transaction price of the unsatisfied or partially unsatisfied performance obligations	1,549	1,089	884	1,082	373	450	**5,427**

A revenue analysis by business segment and region is shown in the segment information on pages 294 to 296.

5. COST OF MATERIALS

Cost of materials included in costs of revenue was comprised of cost of raw materials, supplies and purchased components and cost of purchased services:

€ in millions	2022	2021
Cost of raw materials, supplies and purchased components	8,420	7,629
Write-downs of raw materials, supplies, and purchased components	11	–
Cost of purchased services	1,779	1,191
Cost of materials	**10,210**	**8,820**

6. PERSONNEL EXPENSES

Costs of revenue, selling expenses, general and administrative expenses and research and development expenses included personnel expenses of €17,378 million and €15,610 million in 2022 and 2021, respectively.

Personnel expenses were comprised of the following:

€ in millions	2022	2021
Wages and salaries	14,105	12,679
Social security contributions, cost of retirement pensions and social assistance	3,273	2,931
thereof retirement pensions	458	414
Personnel expenses	**17,378**	**15,610**

Fresenius Group's annual average number of employees by function is shown below:

	2022	2021
Production	43,076	42,773
Service	226,454	222,809
Administration	31,206	30,831
Sales and marketing	13,648	13,574
Research and development	3,741	3,641
Total employees (per capita)	**318,125**	**313,628**

7. RESEARCH AND DEVELOPMENT EXPENSES

Research and development expenses of €867 million (2021: €805 million) included expenditures for research and non-capitalizable development costs as well as regular depreciation and amortization expenses relating to capitalized development costs of €31 million (2021: €22 million). Furthermore, in 2022, research and development expenses included impairments of €25 million (2021: reversals of write-downs on capitalized development expenses of €5 million and impairments of €26 million). The expenses for the further development of the biopharma business included in the research and development expenses amounted to €164 million (2021: €148 million). Thereof, €132 million related to the biosimilars business and €32 million to the acquired mAbxience business.

8. GENERAL AND ADMINISTRATIVE EXPENSES

General and administrative expenses amounted to €5,524 million (2021: €4,394 million) and were related to expenditures for administrative functions not attributable to research and development, production or selling. The increase was mainly due to currency translation effects, expenses associated with the cost and efficiency program, and expenses related to the acquisitions.

9. OTHER OPERATING INCOME AND EXPENSES

In 2022 and 2021, other operating income and expenses mainly included foreign exchange gains and losses, income related to the equity method investee named Vifor Fresenius Medical Care Renal Pharma Ltd. and valuations of equity and debt investments that are measured at fair value through profit and loss as well as the release of provisions. In 2022, the remeasurement gain from InterWell Health and gains on sale and leaseback transactions were additionally included.

10. NET INTEREST

Net interest of -€507 million (2021: -€506 million) included interest expenses of €694 million (2021: €630 million) and interest income of €187 million (2021: €124 million). The main portion of the interest expenses resulted from Fresenius Group's financial liabilities, which are recognized at amortized cost (see note 32, Financial instruments). Moreover, €202 million related to lease liabilities. The main portion of interest income resulted from income in connection with receivables from royalties, from lease receivables and overdue receivables, from interest income related to the release of interest accruals on tax positions, as well as from discounting effects and accrued contingent payments outstanding for acquisitions.

11. TAXES

INCOME TAXES

Income before income taxes was attributable to the following geographic regions:

€ in millions	2022	2021
Germany	261	434
International	2,553	3,218
Total	**2,814**	**3,652**

Income tax expenses (benefits) for 2022 and 2021 consisted of the following:

€ in millions	Current taxes	Deferred taxes	Income taxes
2022			
Germany	**78**	**69**	**147**
International	**744**	**-194**	**550**
Total	**822**	**-125**	**697**
2021			
Germany	78	19	97
International	671	65	736
Total	749	84	833

A reconciliation between the expected and actual income tax expense is shown in the following table. The expected corporate income tax expense is computed by applying the German corporation tax rate (including the solidarity surcharge) and the effective trade tax rate on income before income taxes. The respective combined tax rate was 30.7% and 30.8% for the fiscal years 2022 and 2021, respectively.

€ in millions	2022	2021
Computed "expected" income tax expense	865	1,123
Increase (reduction) in income taxes resulting from:		
Items not recognized for tax purposes	95	96
Tax rate differential	-233	-294
Tax rate changes	0	3
Tax-free income	-31	-50
Taxes for prior years	9	-17
Noncontrolling interests	-55	-65
Other	47	37
Income tax	**697**	**833**
Effective tax rate	**24.8%**	**22.8%**

DEFERRED TAXES

The tax effects of the temporary differences and losses carried forward from prior years that gave rise to deferred tax assets and liabilities at December 31 are presented below:

€ in millions	2022	2021
Deferred tax assets		
Accounts receivable	76	67
Inventories	170	175
Other current assets	154	108
Other non-current assets	209	162
Lease liabilities	1,308	1,287
Provisions and other liabilities	482	487
Benefit obligations	167	322
Losses carried forward from prior years	247	205
Deferred tax assets	**2,813**	**2,813**
Deferred tax liabilities		
Accounts receivable	30	52
Inventories	8	16
Other current assets	252	228
Other non-current assets	2,041	1,883
Right-of-use assets	1,184	1,171
Provisions and other liabilities	136	120
Deferred tax liabilities	**3,651**	**3,470**
Net deferred tax assets/liabilities	**-838**	**-657**

In the consolidated statement of financial position, the net amounts of deferred tax assets and liabilities are included as follows:

€ in millions	2022	2021
Deferred tax assets	831	858
Deferred tax liabilities	1,669	1,515
Net deferred tax assets/liabilities	**-838**	**-657**

The change in the balance of deferred tax assets and deferred tax liabilities does not equal the deferred tax expense/benefit. This is due to deferred taxes that are booked directly to equity, the effects of exchange rate changes on tax assets and liabilities denominated in currencies other than euro and the acquisition and disposal of entities as part of ordinary activities.

As of December 31, 2022, Fresenius Medical Care has not recognized a deferred tax liability on approximately €9 billion (2021: €10 billion) of undistributed earnings of its foreign subsidiaries, because those earnings are considered indefinitely reinvested.

NET OPERATING LOSSES

The expiration of net operating losses as of December 31, 2022 is as follows:

for the fiscal years	€ in millions
2023	47
2024	48
2025	64
2026	107
2027	122
2028	103
2029	135
2030	3
2031	3
2032 and thereafter	139
Total	**771**

The expiration of net operating losses as of December 31, 2021 was as follows:

for the fiscal years	€ in millions
2022	26
2023	46
2024	60
2025	64
2026	93
2027	41
2028	74
2029	5
2030	3
2031 and thereafter	59
Total	**471**

The total remaining operating losses of €1,950 million (2021: €1,546 million) can mainly be carried forward for an unlimited period. The total amount of the existing operating losses as of December 31, 2022 includes an amount of €1,676 million (2021: €1,189 million) that will probably not be realizable. For these operating losses, deferred tax assets were not recognized.

Based upon the level of historical taxable income and projections for future taxable income, the Management of the Fresenius Group believes it is more likely than not that the Fresenius Group will realize the benefits of these deductible differences, net of the existing valuation allowances, at December 31, 2022.

The German tax authorities have recently argued that foreign financing companies held by Fresenius SE & Co. KGaA and Fresenius Medical Care AG & Co. KGaA should be subject to German controlled foreign corporation (CFC) taxation for the years starting in 2017. The companies concerned do not follow this legal opinion and have filed corresponding appeals. In the unlikely event that they are not successful, Fresenius SE & Co. KGaA as well as Fresenius Medical Care & Co. KGaA each face an additional tax burden in the upper double-digit million range for all open years.

12. NONCONTROLLING INTERESTS

As of December 31, noncontrolling interests in net income in the Fresenius Group were as follows:

€ in millions	2022	2021
Noncontrolling interests in Fresenius Medical Care	456	658
Noncontrolling interests in Fresenius Vamed	-4	15
Noncontrolling interests in the business segments		
Fresenius Medical Care	221	250
Fresenius Kabi	50	58
Fresenius Helios	17	16
Fresenius Vamed	5	4
Total noncontrolling interests	**745**	**1,001**

In the fiscal year 2022, Fresenius Medical Care AG & Co. KGaA paid dividends to noncontrolling interests in the amount of €268 million (2021: €266 million).

13. IMPACTS OF THE COVID-19 PANDEMIC

The financial statements of the Fresenius Group have been impacted by COVID-19, mostly in the form of lost revenue and additional costs incurred to protect its patients and employees, to safeguard its production activities and clinical operations and additional freight and logistic costs. Across the Fresenius global footprint, various governments in regions have provided economic assistance programs to address the consequences of the pandemic on companies and support healthcare providers and patients. The related reimbursement payments and funding received by Fresenius have been accounted for in accordance with terms and regulations set forth by the local laws and regulations.

In Germany, the hospitals of the Fresenius Group have received reimbursements and grants to compensate for COVID-19 related financial charges. Hospitals have been compensated for their increase in capacity and related patient services through the postponement of elective treatments and provision of additional intensive care beds for the treatment of COVID-19 patients and for higher treatment costs. As these additional reimbursements for hospital services are paid by the partly state funded healthcare fund, such revenues are recognized in accordance with the Fresenius Group's existing revenue recognition policies for hospital services (IFRS 15, Revenue from Contracts with Customers). In 2022, the German hospitals of the Fresenius Group received total reimbursements and grants of €227 million (2021: €509 million), of which €200 million (2021: €442 million) were recorded in revenue and €27 million (2021: €67 million) as grants in other operating income.

In the United States, Fresenius Medical Care North America received government grants from the U.S. government in the amount of €277 million (2021: €72 million). During the fiscal years 2022 and 2021, Fresenius Medical Care received US$235 million (€224 million) and US$122 million (€103 million), respectively, in U.S. Department of Health and Human Services funding available for healthcare providers affected by the COVID-19 pandemic, of which US$291 million (€277 million) and US$74 million (€62 million), respectively, were recognized in the consolidated statement of income to offset eligible costs. The remaining amount of government grants received recorded in deferred income was US$6 million (€6 million) at December 31, 2022 and US$62 million (€55 million) at December 31, 2021. The Fresenius Group also recorded a contract liability for advance payments received under the Center for Medicare and Medicaid (CMS) Accelerated and Advance Payment program within short-term provisions and other short-term liabilities. Contract liabilities related to the CMS Accelerated and Advance Payment program were US$5 million (€5 million) and US$443 million (€391 million) as of December 31, 2022 and December 31, 2021, respectively.

In addition to the programs above, the Fresenius Group also received grants and other reimbursements under various other programs from multiple governments around the world in the amount of €23 million (2021: €50 million).

All funds received from grants comply with the respective conditions. The Fresenius Group is obliged and committed to fulfilling all the requirements as set out in the grant funding arrangements.

14. EARNINGS PER SHARE

The following table shows the earnings per share including and excluding the dilutive effect from stock options issued:

	2022	2021
Numerators, € in millions		
Net income attributable to shareholders of Fresenius SE & Co. KGaA	1,372	1,818
less effect from dilution due to Fresenius Medical Care shares	–	0
Income available to all ordinary shares	1,372	1,818
Denominators in number of shares		
Weighted average number of ordinary shares outstanding	561,264,305	558,061,878
Potentially dilutive ordinary shares	–	94,447
Weighted average number of ordinary shares outstanding assuming dilution	561,264,305	558,156,325
Basic earnings per share in €	2.44	3.26
Fully diluted earnings per share in €	2.44	3.26

NOTES ON THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

15. CASH AND CASH EQUIVALENTS

As of December 31, cash and cash equivalents were as follows:

€ in millions	2022	2021
Cash	2,175	1,833
Time deposits and securities (with a maturity of up to 90 days)	574	931
Total cash and cash equivalents	**2,749**	**2,764**

As of December 31, 2022 and December 31, 2021, earmarked funds of €180 million and €154 million, respectively, were included in cash and cash equivalents.

The Fresenius Group operates a multi-currency notional cash pooling management system. In this cash pooling management system amounts in euro and other currencies are offset without being transferred to a specific cash pool account. The system is used for an efficient utilization of funds within the Fresenius Group. The Fresenius Group met the conditions to offset balances within this cash pool for reporting purposes. At December 31, 2022, €102 million (December 31, 2021: €117 million) of the cash balances and the equivalent amount of the overdraft balances were offset. Thereof, €81 million related to Fresenius Medical Care (December 31, 2021: €117 million). Before this offset, cash and cash equivalents as of December 31, 2022, were €2,851 million (December 31, 2021: €2,881 million) and short-term debt was €958 million (December 31, 2021: €2,958 million.

16. TRADE ACCOUNTS AND OTHER RECEIVABLES

As of December 31, trade accounts and other receivables were as follows:

€ in millions	2022	2021
Trade accounts and other receivables	7,480	7,494
less allowances for expected credit losses	472	449
Trade accounts and other receivables, net	**7,008**	**7,045**

Within trade accounts and other receivables (before allowances) as of December 31, 2022, €7,275 million (December 31, 2021: €7,378 million) relate to revenue from contracts with customers as defined by IFRS 15. This amount includes €470 million (December 31, 2021: €448 million) of allowances for expected credit losses. Further trade accounts and other receivables, net, relate to other revenue.

When utilized, Fresenius Medical Care assigns interests in certain receivables to institutional investors under its Accounts Receivable Facility. For further information on the utilization of this facility, please see note 23, Debt.

All trade accounts and other receivables are due within one year. Trade accounts and other receivables with a term of more than one year in the amount of €99 million (2021: €46 million) are included in other non-current assets.

The following table shows the development of the allowances for expected credit losses during the fiscal year:

€ in millions	2022	2021
Allowances for expected credit losses at the beginning of the year	**449**	**401**
Change in valuation allowances as recorded in the consolidated statement of income	65	71
Write-offs and recoveries of amounts previously written-off	-40	-24
Foreign currency translation	-2	1
Reclassification to assets held for disposal	0	–
Allowances for expected credit losses at the end of the year	**472**	**449**

Further allowances for expected credit losses are included in other current and non-current assets (see note 18, Other current and non-current assets). As of December 31, 2022, the Fresenius Group had total allowances for expected credit losses of €574 million (2021: €488 million).

The following table shows the credit risk rating grades of trade accounts receivable and their allowances for expected credit losses:

	December 31, 2022			December 31, 2021		
€ in millions	**Total**	**thereof overdue[1]**	**thereof credit impaired[2]**	Total	thereof overdue[1]	thereof credit impaired[2]
Trade accounts and other receivables	7,480	2,903	755	7,494	3,225	691
less allowances for expected credit losses	472	409	357	449	405	340
Trade accounts and other receivables, net	**7,008**	**2,494**	**398**	**7,045**	**2,820**	**351**

[1] Receivables are classified as overdue from the first day of exceeding the contractually agreed payment term.
[2] In case of objective evidence of a detrimental impact on the estimated future cash flows of a financial asset, the asset is considered to be credit impaired. This is generally the case after more than 360 days overdue, at the latest.

17. INVENTORIES

As of December 31, inventories consisted of the following:

€ in millions	2022	2021
Raw materials and purchased components	1,200	971
Work in process	467	440
Finished goods	3,309	2,961
less reserves	143	154
Inventories, net	**4,833**	**4,218**

In 2022, there were no reversals of write-downs and in 2021, immaterial reversals of write-downs of inventory were made.

The companies of the Fresenius Group are obliged to purchase approximately €1,322 million of raw materials and purchased components under fixed terms, of which €785 million was committed at December 31, 2022 for 2023. The terms of these agreements run one to five years.

18. OTHER CURRENT AND NON-CURRENT ASSETS

As of December 31, other current and non-current assets were comprised of the following according to the categorization of the financial instruments:

€ in millions	2022	2022 thereof short-term	2021	2021 thereof short-term
At equity investments	793	–	804	–
Tax receivables	593	568	520	496
Contract assets	444	444	487	487
Advance payments	317	306	256	252
Prepaid expenses	142	106	124	85
Accounts receivable resulting from German hospital law	140	127	118	104
Prepaid rent and insurance	55	55	47	47
Other assets	910	764	657	487
Other non-financial assets, net	**3,394**	**2,370**	**3,013**	**1,958**
Compensation receivable resulting from German hospital law	1,179	772	992	987
Debt instruments	445	170	422	136
Equity investments	224	0	320	–
Leasing receivables	129	–	131	–
Deposits	120	26	120	48
Long-term loans	105	49	118	42
Derivative financial instruments	58	40	20	18
Receivable for supplier rebates	24	24	21	21
Other assets	475	81	416	77
Other financial assets, net	**2,759**	**1,162**	**2,560**	**1,329**
Other assets, net	**6,153**	**3,532**	**5,573**	**3,287**
Allowances	102	53	39	30
Other assets, gross	**6,255**	**3,585**	**5,612**	**3,317**

At equity investments mainly related to the equity method investee of Fresenius Medical Care named Vifor Fresenius Medical Care Renal Pharma Ltd. In 2022, income of €68 million (2021: €93 million) resulting from this equity investment was included in other operating income in the consolidated statement of income.

The accounts receivable resulting from German hospital law contain approved but not yet received earmarked subsidies of the Fresenius Helios operations. The approval is evidenced in a letter written by the granting authorities that Fresenius Helios has already received. The compensation receivable resulting from German hospital law mainly relates to income equalization claims for hospital services.

The increase in compensation receivable in 2022 is mainly due to delayed budget negotiations with providers.

Contract assets mainly related to long-term production contracts for which revenue is recognized over time. As of December 31, 2022, they included €5 million (2021: €1 million) of allowances for expected credit losses.

19. PROPERTY, PLANT AND EQUIPMENT

As of December 31, the acquisition and manufacturing costs as well as accumulated depreciation of property, plant and equipment consisted of the following:

ACQUISITION AND MANUFACTURING COSTS

€ in millions	As of January 1, 2022	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2022**
Land	905	-4	1	2	2	15	891
Buildings and improvements	9,615	188	-3	113	545	225	10,233
Machinery and equipment	11,019	233	18	612	142	321	11,703
Construction in progress	2,172	54	6	881	-643	25	2,445
Property, plant and equipment	**23,711**	**471**	**22**	**1,608**	**46**	**586**	**25,272**

DEPRECIATION

€ in millions	As of January 1, 2022	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2022**
Land	21	0	-3	2	0	1	19
Buildings and improvements	4,311	119	-28	517	77	164	4,832
Machinery and equipment	6,808	132	-19	930	-76	274	7,501
Construction in progress	2	0	0	0	-1	0	1
Property, plant and equipment	**11,142**	**251**	**-50**	**1,449**	**0**	**439**	**12,353**

ACQUISITION AND MANUFACTURING COSTS

€ in millions	As of January 1, 2021	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2021**
Land	879	0	-10	14	25	3	905
Buildings and improvements	8,731	267	19	158	544	104	9,615
Machinery and equipment	10,058	320	25	670	364	418	11,019
Construction in progress	2,125	84	-4	905	-920	18	2,172
Property, plant and equipment	**21,793**	**671**	**30**	**1,747**	**13**	**543**	**23,711**

DEPRECIATION

€ in millions	As of January 1, 2021	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2021**
Land	17	0	–	4	1	1	21
Buildings and improvements	3,735	165	-2	462	20	69	4,311
Machinery and equipment	6,123	186	-1	891	-13	378	6,808
Construction in progress	6	0	–	0	-1	3	2
Property, plant and equipment	**9,881**	**351**	**-3**	**1,357**	**7**	**451**	**11,142**

CARRYING AMOUNTS

€ in millions	**December 31, 2022**	December 31, 2021
Land	872	884
Buildings and improvements	5,401	5,304
Machinery and equipment	4,202	4,211
Construction in progress	2,444	2,170
Property, plant and equipment	**12,919**	**12,569**

Depreciation and impairments on property, plant and equipment for the years 2022 and 2021 amounted to €1,449 million and €1,357 million, respectively. They are allocated within costs of revenue, selling expenses, general and administrative expenses and research and development expenses, depending upon the use of the asset. In 2022, depreciation and impairments on property, plant and equipment included impairment losses of €29 million related to a production plant and associated machines which were fully written off as a result of economic sanctions imposed on Russia, due to the war in Ukraine, that negatively impacted the supply chain to the country.

LEASING

Machinery and equipment as of December 31, 2022 and 2021 included medical devices which Fresenius Medical Care and Fresenius Kabi lease to hospitals, patients and physicians under operating leases in an amount of €965 million and €914 million, respectively.

For information on the development of the right-of-use assets, see note 31, Leases.

20. GOODWILL AND OTHER INTANGIBLE ASSETS

As of December 31, the acquisition cost and accumulated amortization of intangible assets consisted of the following:

ACQUISITION COST

€ in millions	As of January 1, 2022	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2022**
Goodwill	29,138	975	1,433	96	–	3	31,639
Customer relationships	765	7	5	0	–	–	777
Tradenames with finite useful lives	693	2	–	–	0	–	695
Capitalized development costs	1,020	26	399	39	-44	8	1,432
Patents, product and distribution rights	666	35	0	5	5	27	684
Software	1,550	33	32	241	76	100	1,832
Technology	1,015	53	173	0	–	94	1,147
Tradenames with indefinite useful lives	277	18	13	0	–	–	308
Non-compete agreements	344	19	0	0	1	9	355
Management contracts	3	0	–	–	–	–	3
Other	396	7	4	58	-15	8	442
Goodwill and other intangible assets	**35,867**	**1,175**	**2,059**	**439**	**23**	**249**	**39,314**

AMORTIZATION

€ in millions	As of January 1, 2022	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2022**
Goodwill	195	–	–	–	–	–	195
Customer relationships	247	4	–	39	–	–	290
Tradenames with finite useful lives	210	1	–	41	–	0	252
Capitalized development costs	312	11	-10	56	0	7	362
Patents, product and distribution rights	458	22	0	44	0	24	500
Software	687	14	-1	235	-1	98	836
Technology	455	21	–	87	0	94	469
Tradenames with indefinite useful lives	1	–	-1	–	–	–	–
Non-compete agreements	311	18	0	9	1	9	330
Management contracts	2	0	–	–	–	–	2
Other	215	5	0	25	-1	9	235
Goodwill and other intangible assets	**3,093**	**96**	**-12**	**536**	**-1**	**241**	**3,471**

ACQUISITION COST

€ in millions	As of January 1, 2021	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2021**
Goodwill	26,794	1,280	1,052	13	–	1	29,138
Customer relationships	755	10	–	0	–	–	765
Tradenames with finite useful lives	690	2	0	–	1	–	693
Capitalized development costs	937	31	0	41	12	1	1,020
Patents, product and distribution rights	637	46	0	10	2	29	666
Software	1,355	38	6	237	-32	54	1,550
Technology	947	68	–	–	0	–	1,015
Tradenames with indefinite useful lives	224	18	35	–	–	–	277
Non-compete agreements	315	25	6	–	–	2	344
Management contracts	3	0	–	–	–	0	3
Other	377	14	2	41	-17	21	396
Goodwill and other intangible assets	**33,034**	**1,532**	**1,101**	**342**	**-34**	**108**	**35,867**

AMORTIZATION

€ in millions	As of January 1, 2021	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2021**
Goodwill	195	–	–	–	–	–	195
Customer relationships	203	5	–	39	–	–	247
Tradenames with finite useful lives	168	1	–	41	–	–	210
Capitalized development costs	256	14	–	43	–	1	312
Patents, product and distribution rights	404	28	–	27	0	1	458
Software	625	17	0	160	-63	52	687
Technology	357	25	–	72	1	–	455
Tradenames with indefinite useful lives	–	–	–	1	–	–	1
Non-compete agreements	281	23	0	9	–	2	311
Management contracts	1	0	–	1	–	–	2
Other	209	7	0	21	-1	21	215
Goodwill and other intangible assets	**2,699**	**120**	**0**	**414**	**-63**	**77**	**3,093**

CARRYING AMOUNTS

€ in millions	**December 31, 2022**	December 31, 2021
Goodwill	31,444	28,943
Customer relationships	487	518
Tradenames with finite useful lives	443	483
Capitalized development costs	1,070	708
Patents, product and distribution rights	184	208
Software	996	863
Technology	678	560
Tradenames with indefinite useful lives	308	276
Non-compete agreements	25	33
Management contracts	1	1
Other	207	181
Goodwill and other intangible assets	**35,843**	**32,774**

Amortization and impairments on intangible assets amounted to €536 million and €414 million for the years 2022 and 2021, respectively.

It is allocated within costs of revenue, selling expenses, general and administrative expenses and research and development expenses, depending upon the use of the asset.

The split of intangible assets into amortizable and non-amortizable intangible assets is shown in the following tables:

AMORTIZABLE INTANGIBLE ASSETS

	December 31, 2022			December 31, 2021		
€ in millions	**Acquisition cost**	**Accumulated amortization**	**Carrying amount**	Acquisition cost	Accumulated amortization	Carrying amount
Customer relationships	777	290	487	765	247	518
Tradenames	695	252	443	693	210	483
Capitalized development costs	1,432	362	1,070	1,020	312	708
Patents, product and distribution rights	684	500	184	666	458	208
Software	1,832	836	996	1,550	687	863
Technology	1,147	469	678	1,015	455	560
Non-compete agreements	355	330	25	344	311	33
Other	442	235	207	396	215	181
Total	**7,364**	**3,274**	**4,090**	**6,449**	**2,895**	**3,554**

Fresenius Medical Care capitalized development costs in an amount of €75 million for the fiscal year 2022 (2021: €58million). Capitalized development costs are amortized on a straight-line basis over a useful life of 7 years. The amortization expense for the fiscal year 2022 amounted to €10 million (2021: €6 million). In the case of Fresenius Kabi, development costs capitalized amounted to €983 million at December 31, 2022 (December 31, 2021: €647 million). The amortization is recorded on a straight-line basis over a useful life of 5 to 20 years and amounted to €20 million for the fiscal year 2022 (2021: €15 million). Furthermore, in 2022, research and development expenses included impairments of €25 million (2021: reversals of write-downs on capitalized development expenses of €5 million and impairments of €26 million) (see note 7, Research and development expenses). These are included in the preceding amortization tables in the columns additions.

NON-AMORTIZABLE INTANGIBLE ASSETS

€ in millions	December 31, 2022 Acquisition cost	December 31, 2022 Accumulated amortization	December 31, 2022 Carrying amount	December 31, 2021 Acquisition cost	December 31, 2021 Accumulated amortization	December 31, 2021 Carrying amount
Goodwill	31,639	195	31,444	29,138	195	28,943
Tradenames	308	–	308	277	1	276
Management contracts	3	2	1	3	2	1
Total	**31,950**	**197**	**31,753**	**29,418**	**198**	**29,220**

The carrying amount of goodwill has developed as follows:

€ in millions	Fresenius Medical Care	Fresenius Kabi	Fresenius Helios	Fresenius Vamed	Corporate	**Fresenius Group**
Carrying amount as of January 1, 2021	**12,959**	**5,058**	**8,278**	**298**	**6**	**26,599**
Additions	444	–	621	0	–	1,065
Disposals	–	-1	0	–	–	-1
Foreign currency translation	958	316	4	2	–	1,280
Carrying amount as of December 31, 2021	**14,361**	**5,373**	**8,903**	**300**	**6**	**28,943**
Additions	702	653	167	14	–	1,536
Disposals	-7	–	-3	–	–	-10
Impairment loss	–	–	–	–	–	–
Foreign currency translation	735	235	6	-1	–	975
Carrying amount as of December 31, 2022	**15,791**	**6,261**	**9,073**	**313**	**6**	**31,444**

The increase of goodwill mainly relates to acquisitions (see note 2, Acquisitions, divestitures and investments) and foreign currency translation.

The Fresenius Group did not record any impairment losses related to goodwill in the fiscal years 2021 and 2022 after comparing each CGU's value in use to its carrying amount.

As of December 31, 2022, the carrying amounts of the other non-amortizable intangible assets were €254 million (2021: €226 million) for Fresenius Medical Care, €14 million (2021: €15 million) for Fresenius Kabi and €41 million (2021: €36 million) for Fresenius Helios.

21. PROVISIONS

As of December 31, provisions consisted of the following:

€ in millions	2022	2022 thereof short-term	2021	2021 thereof short-term
Self-insurance programs	457	144	427	306
Personnel expenses	364	279	384	288
Warranties and complaints	281	277	240	236
Litigation and other legal risks	122	102	72	50
Interest payable related to income taxes	35	–	53	–
Other provisions	534	300	482	269
Provisions	**1,793**	**1,102**	**1,658**	**1,149**

The following table shows the development of provisions in the fiscal year:

€ in millions	As of January 1, 2022	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Utilized	Reversed	As of December 31, 2022
Self-insurance programs	427	15	21	128	–	-93	-41	457
Personnel expenses	384	8	11	157	5	-164	-37	364
Warranties and complaints	240	0	0	187	0	-125	-21	281
Litigation and other legal risks	72	-2	1	79	-11	-8	-9	122
Interest payable related to income taxes	53	0	–	1	0	-4	-15	35
Other provisions	482	0	20	194	1	-108	-55	534
Total	**1,658**	**21**	**53**	**746**	**-5**	**-502**	**-178**	**1,793**

Provisions for personnel expenses mainly refer to share-based and other compensation plans, severance payments, inflationary compensation payments and jubilee payments.

For details regarding provisions for self-insurance programs, please see note 1. III. x, Self-insurance programs.

For details regarding litigation and other legal risks, please see note 30, Commitments and contingencies.

22. OTHER LIABILITIES

As of December 31, other liabilities consisted of the following according to the categorization of the financial instruments:

€ in millions	2022	2022 thereof short-term	2021	2021 thereof short-term
Personnel liabilities	1,664	1,536	1,608	1,478
Tax liabilities	333	298	335	314
Accounts payable resulting from German hospital law	397	397	179	178
Contract liabilities	186	162	534	504
Deferred income	120	97	170	142
All other liabilities	1,151	957	1,193	975
Other non-financial liabilities	**3,851**	**3,447**	**4,019**	**3,591**
Put option liabilities	2,005	688	1,044	685
Invoices outstanding	1,217	1,217	1,066	1,066
Debtors with credit balances	750	750	676	676
Accrued contingent payments outstanding for acquisitions	633	249	528	41
Bonuses and discounts	330	330	296	296
Compensation payable resulting from German hospital law	179	179	133	132
Interest liabilities	160	160	145	145
Legal matters, advisory and audit fees	58	58	56	56
Commissions	33	33	31	31
Derivative financial instruments	30	29	47	47
All other liabilities	5	0	4	0
Other financial liabilities	**5,400**	**3,693**	**4,026**	**3,175**
Other liabilities	**9,251**	**7,140**	**8,045**	**6,766**

Personnel liabilities mainly include liabilities for wages and salaries and social security liabilities.

Contract liabilities primarily relate to advance payments from customers and to sales of dialysis machines. In these cases, revenue is recognized upon installation and provision of the necessary technical instructions whereas a receivable is recognized once the machine is delivered or billed to the customer. Furthermore, contract liabilities relate to advance payments for Fresenius Medical Care under the CMS Accelerated and Advance Payment program which are recorded as contract liability upon receipt and recognized as revenue when the respective services are provided.

The accounts payable resulting from German hospital law contain earmarked subsidies received but not yet spent appropriately by Fresenius Helios. The amount not yet spent appropriately is classified as liability.

The Fresenius Group, as option writer of existing put options, has potential obligations to purchase noncontrolling interests held by third parties in certain of its consolidated subsidiaries. If these put options were exercised, the Fresenius Group would be required to purchase all or part of third-party owners' noncontrolling interests at the present value of the redemption amount based on the fair value at the time of exercise.

The accrued contingent payments outstanding for acquisitions include €424 million at December 31, 2022 (2021: €441 million) for the acquisition of the biosimilars business as well as €123 million for the acquisition of the Ivenix business and €12 million for the acquisition of the mAbxience business.

23. DEBT

SHORT-TERM DEBT

As of December 31, short-term debt consisted of the following:

€ in millions	Book value 2022	Book value 2021
Fresenius SE & Co. KGaA Commercial Paper	80	1,056
Fresenius Medical Care AG & Co. KGaA Commercial Paper	497	715
Other short-term debt	279	1,070
Short-term debt	**856**	**2,841**

Other short-term debt mainly consists of borrowings by certain entities of the Fresenius Group under lines of credit with commercial banks. The average interest rates on the borrowings at December 31, 2022 and 2021 were 4.20% and 1.29%, respectively.

LONG-TERM DEBT

As of December 31, long-term debt net of debt issuance costs consisted of the following:

€ in millions	Book value 2022	Book value 2021
Schuldschein Loans	1,592	1,757
Loan from the European Investment Bank	400	–
Accounts Receivable Facility of Fresenius Medical Care	94	–
Other	749	843
Subtotal	**2,835**	**2,600**
less current portion	669	473
Long-term debt, less current portion	**2,166**	**2,127**

Schuldschein Loans

As of December 31, Schuldschein Loans of the Fresenius Group net of debt issuance costs consisted of the following:

	Notional amount	Maturity	Interest rate fixed / variable	Book value € in millions 2022	2021
Fresenius SE & Co. KGaA 2017/2022	€372 million	Jan. 31, 2022	0.93% / variable	–	372
Fresenius SE & Co. KGaA 2015/2022	€21 million	April 7, 2022	1.61%	–	21
Fresenius SE & Co. KGaA 2017/2024	€175 million	Jan. 31, 2023	variable	175	175
Fresenius SE & Co. KGaA 2019/2023	€378 million	Sept. 25, 2023	0.55% / variable	378	378
Fresenius SE & Co. KGaA 2017/2024	€246 million	Jan. 31, 2024	1.40%	246	246
Fresenius SE & Co. KGaA 2019/2026	€238 million	Sept. 23, 2026	0.85% / variable	238	238
Fresenius SE & Co. KGaA 2017/2027	€207 million	Jan. 29, 2027	1.96% / variable	206	206
Fresenius SE & Co. KGaA 2019/2029	€84 million	Sept. 24, 2029	1.10%	84	84
Fresenius US Finance II, Inc. 2016/2023	US$43 million	March 10, 2023	3.12%	40	37
Fresenius Medical Care AG & Co. KGaA 2022/2027	€25 million	Feb. 14, 2027	variable	25	–
Fresenius Medical Care AG & Co. KGaA 2022/2029	€200 million	Feb. 14, 2029	variable	200	–
Schuldschein Loans				**1,592**	**1,757**

On February 14, 2022, Fresenius Medical Care AG & Co. KGaA issued €225 million of Schuldschein Loans in two tranches at variable interest rates with maturities of five and seven years. The proceeds were used for general corporate purposes including refinancing of existing financial liabilities.

The variable tranche of €175 million of Fresenius SE & Co. KGaA's Schuldschein Loans in the total amount of €421 million originally due on January 31, 2024 was repaid prior to maturity on January 31, 2023.

As of December 31, 2022, the variable tranche of €175 million of Fresenius SE & Co. KGaA's Schuldschein Loans which was prematurely due on January 31, 2023 as well as the Schuldschein Loans of Fresenius US Finance II, Inc. in the amount of US$43 million which were due on March 10, 2023 and the Schuldschein Loans of Fresenius SE & Co. KGaA in the amount of €378 million due on September 25, 2023, are shown as current portion of long-term debt in the consolidated statement of financial position.

The Schuldschein Loans of Fresenius US Finance II, Inc. are guaranteed by Fresenius SE & Co. KGaA, Fresenius Kabi AG and Fresenius ProServe GmbH.

Loan from the European Investment Bank

On January 31, 2022, Fresenius SE & Co. KGaA drew a loan from the European Investment Bank in the amount of €400 million with variable interest rates which is due on December 15, 2025.

Accounts Receivable Facility of Fresenius Medical Care

On August 11, 2021, the asset securitization facility (Accounts Receivable Facility) of Fresenius Medical Care was amended and restated, extending it until August 11, 2024. The maximum capacity of US$900 million (€768 million at August 11, 2021) remains unchanged under the restated Accounts Receivable Facility.

At December 31, 2022, there were outstanding borrowings under the Accounts Receivable Facility of US$100 million (€94million) (2021: US$ 0 million (€0 million)). In the amounts shown, debt issuance costs are not included. Fresenius Medical Care had letters of credit outstanding under the Accounts Receivable Facility in the amount of US$13 million (€12 million) at December 31, 2022 and US$13 million (€11 million) at December 31, 2021. These letters of credit are not included above as part of the balance outstanding at December 31, 2022, however, they reduce available borrowings under the Accounts Receivable Facility.

Under the Accounts Receivable Facility, certain receivables are contributed to NMC Funding Corp. (NMC Funding), a wholly owned subsidiary of Fresenius Medical Care. NMC Funding then assigns percentage ownership interests in the accounts receivable to certain bank investors (and their conduit affiliates). Under the terms of the Accounts Receivable Facility, NMC Funding retains the rights in the underlying cash flows of the transferred receivables. Interest is remitted to the bank investors at the end of each tranche period. If NMC Funding requires additional credit, the principal cash flows are reinvested to purchase additional interests in the receivables. Borrowings under the Accounts Receivable Facility are expected to remain long-term. NMC Funding retains significant risks and rewards in the receivables, among other things, the percentage ownership interest assigned requires Fresenius Medical Care to retain first loss risk in those receivables, and Fresenius Medical Care can, at any time, recall all the then outstanding transferred interests in the accounts receivable. Consequently, the receivables remain on the consolidated statement of financial position and the proceeds from the transfer of percentage ownership interests are recorded as long-term debt.

NMC Funding pays interest to the bank investors, calculated based on the commercial paper rates for the particular tranches selected. At December 31, 2022, the interest rate was 4.47%. At December 31, 2021, this facility was not utilized. Refinancing fees, which include legal costs and bank fees, are amortized over the term of the facility.

CREDIT LINES AND OTHER SOURCES OF LIQUIDITY

The syndicated credit facilities of Fresenius SE & Co. KGaA and Fresenius Medical Care AG & Co. KGaA in the amount of €2.0 billion each which were entered into in July 2021 serve as backup lines. As an expression of both companies' commitment to integrating sustainability into all aspects of their business, a sustainability component has been embedded in both credit lines. On June 8, 2022, both syndicated credit facilities were amended and extended to extend the term by one year and replace U.S. dollar LIBOR as the reference rate with the Term Secured Overnight Financing Rate. They were undrawn as of December 31, 2022. In addition, further bilateral facilities are available to the Fresenius Group which have not been utilized, or have only been utilized in part, as of the reporting date.

At December 31, 2022, the available borrowing capacity resulting from unutilized credit facilities was approximately €6.5 billion. Thereof, €4.0 billion related to the syndicated credit facilities and approximately €2.5 billion for bilateral facilities with commercial banks

In addition, Fresenius SE & Co. KGaA has a commercial paper program in the amount of €1,500 million under which short-term notes can be issued. As of December 31, 2022, the commercial paper program of Fresenius SE & Co. KGaA was utilized in the amount of €80 million.

Fresenius Medical Care can also issue short-term notes under a commercial paper program in the amount of €1,500 million. As of December 31, 2022, the commercial paper program of Fresenius Medical Care AG & Co. KGaA was utilized in the amount of €497 million.

Additional financing of up to US$900 million (€844 million) can be provided using the Fresenius Medical Care Accounts Receivable Facility which had been utilized with US$100 million (€94 million) and letters of credit of US$13 million (€12 million) as of December 31, 2022.

24. BONDS

Fresenius SE & Co. KGaA and Fresenius Medical Care AG & Co. KGaA each maintain debt issuance programs which enable the companies to issue bonds up to a total volume of €12.5 billion and €10 billion, respectively, each in various currencies and maturities. In 2021, the proceeds of the financing activities were mainly used for general corporate purposes, including refinancing of existing financial liabilities.

As of December 31, bonds of the Fresenius Group net of debt issuance costs consisted of the following:

				Book value € in millions	
	Notional amount	Maturity	Interest rate	**2022**	2021
Fresenius Finance Ireland PLC 2017/2024	€700 million	Jan. 30, 2024	1.50%	699	699
Fresenius Finance Ireland PLC 2021/2025	€500 million	Oct. 1, 2025	0.00%	498	497
Fresenius Finance Ireland PLC 2017/2027	€700 million	Feb. 1, 2027	2.125%	696	695
Fresenius Finance Ireland PLC 2021/2028	€500 million	Oct. 1, 2028	0.50%	497	497
Fresenius Finance Ireland PLC 2021/2031	€500 million	Oct. 1, 2031	0.875%	495	494
Fresenius Finance Ireland PLC 2017/2032	€500 million	Jan. 30, 2032	3.00%	496	496
Fresenius SE & Co. KGaA 2014/2024	€450 million	Feb. 1, 2024	4.00%	450	449
Fresenius SE & Co. KGaA 2019/2025	€500 million	Feb. 15, 2025	1.875%	498	497
Fresenius SE & Co. KGaA 2022/2025	€750 million	May 24, 2025	1.875%	747	–
Fresenius SE & Co. KGaA 2022/2026	€500 million	May 28, 2026	4.25%	496	–
Fresenius SE & Co. KGaA 2020/2026	€500 million	Sep. 28, 2026	0.375%	497	495
Fresenius SE & Co. KGaA 2020/2027	€750 million	Oct. 8, 2027	1.625%	743	742
Fresenius SE & Co. KGaA 2020/2028	€750 million	Jan. 15, 2028	0.75%	746	745
Fresenius SE & Co. KGaA 2019/2029	€500 million	Feb. 15, 2029	2.875%	496	495
Fresenius SE & Co. KGaA 2022/2029	€500 million	Nov. 28, 2029	5.00%	495	–
Fresenius SE & Co. KGaA 2022/2030	€550 million	May 24, 2030	2.875%	542	–
Fresenius SE & Co. KGaA 2020/2033	€500 million	Jan. 28, 2033	1.125%	497	497
Fresenius US Finance II, Inc. 2015/2023	US$300 million	Jan. 15, 2023	4.50%	–	265
Fresenius Medical Care AG & Co. KGaA 2019/2023	€650 million	Nov. 29, 2023	0.25%	649	649
Fresenius Medical Care AG & Co. KGaA 2018/2025	€500 million	July 11, 2025	1.50%	499	498
Fresenius Medical Care AG & Co. KGaA 2020/2026	€500 million	May 29, 2026	1.00%	497	496
Fresenius Medical Care AG & Co. KGaA 2019/2026	€600 million	Nov. 30, 2026	0.625%	596	595
Fresenius Medical Care AG & Co. KGaA 2022/2027	€750 million	Sep. 20, 2027	3.875%	745	–
Fresenius Medical Care AG & Co. KGaA 2019/2029	€500 million	Nov. 29, 2029	1.25%	498	497
Fresenius Medical Care AG & Co. KGaA 2020/2030	€750 million	May 29, 2030	1.50%	747	746
Fresenius Medical Care US Finance II, Inc. 2012/2022	US$700 million	Jan. 31, 2022	5.875%	–	618
Fresenius Medical Care US Finance II, Inc. 2014/2024	US$400 million	Oct. 15, 2024	4.75%	374	352
Fresenius Medical Care US Finance III, Inc. 2019/2029	US$500 million	June 15, 2029	3.75%	462	434
Fresenius Medical Care US Finance III, Inc. 2020/2031	US$1,000 million	Feb. 16, 2031	2.375%	930	875
Fresenius Medical Care US Finance III, Inc. 2021/2026	US$850 million	Dec. 1, 2026	1.875%	791	744
Fresenius Medical Care US Finance III, Inc. 2021/2031	US$650 million	Dec. 1, 2031	3.00%	602	567
Bonds				**16,978**	**14,634**

FRESENIUS SE & CO. KGAA

On November 28, 2022, Fresenius SE & Co. KGaA placed bonds with an aggregate volume of €1,000 million. The bonds consist of two tranches with maturities of three and a half and seven years.

On May 24, 2022, Fresenius SE & Co. KGaA placed bonds with an aggregate volume of €1,300 million. The bonds consist of two tranches with maturities of three and eight years.

On April 1, 2021, Fresenius Finance Ireland PLC issued bonds with an aggregate volume of €1,500 million. The bonds consist of three tranches with maturities of four and a half, seven and a half and ten and a half years.

The bonds issued by Fresenius US Finance II, Inc. in the amount of US$300 million, which were originally due on January 15, 2023, were redeemed prior to maturity on December 13, 2022.

All bonds of Fresenius Finance Ireland PLC are guaranteed by Fresenius SE & Co. KGaA. Some of the bonds issued may be redeemed prior to their maturity at the option of the issuers at a price of 100% plus accrued interest and a premium calculated pursuant to the terms of the indentures under observance of certain notice periods.

The holders of Fresenius bonds have the right to request that the issuers repurchase the bonds at 101% of principal plus accrued interest upon the occurrence of a change of control followed by a decline in the rating of the respective bonds.

Fresenius SE & Co. KGaA has agreed to a number of covenants to provide protection to the holders of bonds issued before 2017, which partly restrict the scope of action of Fresenius SE & Co. KGaA and its subsidiaries (excluding Fresenius Medical Care AG & Co. KGaA (FMC-AG & Co. KGaA) and its subsidiaries). These covenants include restrictions on further debt that can be raised, the mortgaging or sale of assets, the entering into sale and leaseback transactions as well as mergers and consolidations with other companies. Some of these restrictions were suspended automatically as the rating of the respective bonds reached investment grade status. As of December 31, 2022, the Fresenius Group was in compliance with all of its covenants.

FRESENIUS MEDICAL CARE AG & CO. KGAA

On September 20, 2022, Fresenius Medical Care AG & Co. KGaA placed bonds with an aggregate volume of €750 million with a maturity of five years.

On May 18, 2021, Fresenius Medical Care US Finance III, Inc. issued bonds with an aggregate volume of US$1,500 million. The bonds consist of two tranches with maturities of five years and seven months and ten years and seven months.

As of December 31, 2022, the bonds issued by Fresenius Medical Care AG & Co. KGaA in the amount of €650 million, which are due on November 29, 2023, are shown as current portion of bonds in the consolidated statement of financial position.

The bonds of Fresenius Medical Care US Finance II, Inc. and Fresenius Medical Care US Finance III, Inc. (wholly owned subsidiaries of FMC-AG & Co. KGaA) are guaranteed jointly and severally by FMC-AG & Co. KGaA and Fresenius Medical Care Holdings, Inc. As for all outstanding U.S. dollar bonds, the issuers may redeem the respective bonds at any time at 100% of principal plus accrued interest and a premium calculated pursuant to the terms of the indentures.

The holders of Fresenius Medical Care bonds have the right to request that the respective issuers repurchase the respective bonds at 101% of principal plus accrued interest upon the occurrence of a change of control of FMC-AG & Co. KGaA followed by a decline in the rating of the respective bonds.

FMC-AG & Co. KGaA has agreed to a number of covenants to provide protection to the holders of bonds issued before 2018 which, under certain circumstances, restrict the scope of action of FMC-AG & Co. KGaA and its subsidiaries. These covenants include restrictions on further debt that can be raised, the mortgaging or sale of assets, the entering into sale and leaseback transactions as well as mergers and consolidations with other companies. Some of these restrictions were suspended automatically as the rating of the respective bonds reached investment grade status. As of December 31, 2022, FMC-AG & Co. KGaA and its subsidiaries were in compliance with all of their covenants under the bonds.

25. CONVERTIBLE BONDS

As of December 31, the convertible bonds of the Fresenius Group net of debt issuance costs consisted of the following:

					Book value € in millions	
	Notional amount	Maturity	Coupon	Current conversion price	**2022**	2021
Fresenius SE & Co. KGaA 2017/2024	€500 million	Jan. 31, 2024	0.000%	€104.2835	491	482
Convertible bonds					**491**	**482**

The fair value of the derivative embedded in the convertible bonds of Fresenius SE & Co. KGaA was €9 thousand and €70 thousand at December 31, 2022 and December 31, 2021, respectively. Fresenius SE & Co. KGaA purchased stock options (call options) with a corresponding fair value to hedge future fair value fluctuations of this derivative.

Potential conversions are always cash-settled. Any increase of Fresenius' share price above the conversion price would be offset by a corresponding value increase of the call options.

26. PENSIONS AND SIMILAR OBLIGATIONS

GENERAL

The Fresenius Group recognizes pension costs and related pension liabilities for current and future benefits to qualified current and former employees of the Fresenius Group. Fresenius Group's pension plans are structured in accordance with the differing legal, economic and fiscal circumstances in each country. The Fresenius Group currently has two types of plans, defined benefit and defined contribution plans. In general, plan benefits in defined benefit plans are based on all or a portion of the employees' years of services and final salary. Plan benefits in defined contribution plans are determined by the amount of contribution by the employee and the employer, both of which may be limited by legislation, and the returns earned on the investment of those contributions. For the members of the Management Board of Fresenius Management SE, both defined benefit plans as well as defined contribution plans exist. In their basic features, these are similar to the obligations for the employees.

Upon retirement under defined benefit plans, the Fresenius Group is required to pay defined benefits to former employees when the defined benefits become due. Defined benefit plans may be funded or unfunded. The Fresenius Group's major funded defined benefit plans are in the United States, Switzerland, the United Kingdom, France, South Korea, Belgium and Austria. Major unfunded defined benefit plans exist in Germany and France.

Actuarial assumptions generally determine benefit obligations under defined benefit plans. The actuarial calculations require the use of estimates. The main factors used in the actuarial calculations affecting the level of the benefit obligations are: assumptions on life expectancy, the discount rate and future salary and benefit levels. Under Fresenius Group's funded plans, assets are set aside to meet future payment obligations. An estimated return on the plan assets is recognized as income in the respective period. Actuarial gains and losses are generated when there are variations in the actuarial assumptions and by differences between the actual and the estimated projected benefit obligations and the return on plan assets for that year. A company's pension liability is impacted by these actuarial gains or losses.

Related to defined benefit plans, the Fresenius Group is exposed to certain risks. Besides general actuarial risks, e.g. the longevity risk and the interest rate risk, the

Fresenius Group is exposed to market risk as well as to investment risk.

In the case of Fresenius Group's funded plans, the defined benefit obligation is offset against the fair value of plan assets (deficit or surplus). A pension liability is recognized in the consolidated statement of financial position if the defined benefit obligation exceeds the fair value of plan assets. An asset is recognized and reported under other assets in the consolidated statement of financial position if the fair value of plan assets exceeds the defined benefit obligation and if the Fresenius Group has a right of reimbursement against the fund or a right to reduce future payments to the fund.

Under defined contribution plans, the Fresenius Group pays defined contributions to an independent third party as directed by the employee during the employee's service life which satisfies all obligations of the Fresenius Group to the employee. The employee retains all rights to the contributions made by the employee and to the vested portion of the Fresenius Group paid contributions upon leaving the Fresenius Group. The Fresenius Group has a main defined contribution plan in the United States.

DEFINED BENEFIT PENSION PLANS

At December 31, 2022, the defined benefit obligation (DBO) of the Fresenius Group of €1,558 million (2021: €2,240 million) included €473 million (2021: €583 million) funded by plan assets and €1,085 million (2021: €1,657 million) covered by pension liabilities. Furthermore, the pension liability contains benefit obligations offered by other subsidiaries of Fresenius Medical Care in an amount of €45 million (2021: €46 million). The current portion of the pension liability in an amount of €31 million (2021: €28 million) is recognized in the consolidated statement of financial position within short-term provisions and other short-term liabilities. The non-current portion of €1,099 million (2021: €1,675 million) is recorded as pension liability. The decrease of the long-term pension liabilities by €576 million is mainly attributable to adjustments to the discount rate, which resulted in an actuarial gain of the same amount to be recognized in other comprehensive income (loss). For the German "Versorgungsordnung der Fresenius-Unternehmen", which accounts for the substantial portion of the pension liabilities at approximately 75%, a discount rate of 4.30% was applied as of December 31, 2022 (December 31, 2021: 1.40%).

The major part of pension liabilities relates to Germany. At December 31, 2022, 81% of the pension liabilities were recognized in Germany and 15% predominantly in the rest of Europe and North America. 49% of the beneficiaries were located in North America, 36% in Germany and the remainder throughout the rest of Europe and other continents.

75% of the pension liabilities in an amount of €1,130 million relate to the "Versorgungsordnung der Fresenius-Unternehmen" established in 2016 (Pension Plan 2016) and to commitments to the Management Board. The Pension Plan 2016 applied for most of the German entities of the Fresenius Group for entries up until December 31, 2019 except Fresenius Helios and Fresenius Vamed. For new entrants from January 1, 2020 onwards, a new defined contribution plan applies for these entities. The remaining pension liabilities relate to individual plans from Fresenius Helios entities in Germany and non-German Group entities.

Plan benefits are generally based on an employee's years of service and final salary. Consistent with predominant practice in Germany, the benefit obligations of the German entities of the Fresenius Group are unfunded. The German Pension Plan 2016 does not have a separate pension asset.

Fresenius Medical Care Holdings, Inc. (FMCH), a subsidiary of Fresenius Medical Care AG & Co. KGaA, has a defined benefit pension plan for its employees in the United States and supplemental executive retirement plans. During the first quarter of 2002, FMCH curtailed these pension plans. Under the curtailment amendment for substantially all employees eligible to participate in the plan, benefits have been frozen as of the curtailment date and no additional defined benefits for future services will be earned. FMCH has retained all employee benefit obligations as of the curtailment date. Each year, FMCH contributes to the plan covering United States employees at least the minimum amount required by the Employee Retirement Income Security Act of 1974, as amended. In 2022, there was no minimum funding requirement for the defined benefit plan. FMCH voluntarily provided €1 million. Expected funding for 2023 is €1 million.

Controlling and managing the administration of the plan in the United States was delegated by Fresenius Medical Care to an administrative committee. This committee has the authority and discretion to manage the assets of the fund and to approve and adopt certain plan amendments. The board of directors of National Medical Care, Inc., a subsidiary of Fresenius Medical Care, reserves the right to approve or adopt all major plan amendments, such as termination, modification or termination of the future benefit accruals and plan mergers with other pension plans.

Benefit plans offered by other subsidiaries of Fresenius Medical Care outside of the United States, Germany and France contain separate benefit obligations. The total pension liability for these other plans was €45 million and €46 million at December 31, 2022 and 2021, respectively. The current pension liability of €5 million (2021: €4 million) is recognized as a current liability in the line item short-term provisions and other short-term liabilities. The non-current pension liability of €40 million (2021: €42 million) for these plans is recorded as pension liability in the consolidated statement of financial position.

Fresenius Group's benefit obligations relating to fully or partly funded pension plans were €572 million. Benefit obligations relating to unfunded pension plans were €986 million.

The following table shows the changes in benefit obligations, the changes in plan assets, the deficit or surplus of the pension plans and the pension liability. Benefits paid as shown in the changes in benefit obligations represent payments made from both the funded and unfunded plans while the benefits paid as shown in the changes in plan assets include only benefit payments from Fresenius Group's funded benefit plans.

The net pension liability has developed as follows:

€ in millions	2022	2021
Benefit obligations at the beginning of the year	**2,240**	**2,086**
Changes in entities consolidated	-1	-2
Foreign currency translation	29	45
Service cost	92	85
Past service cost	4	0
Settlements	-3	0
Net interest cost	37	34
Contributions by plan participants	6	5
Transfer of plan participants	-7	9
Remeasurements	-769	36
Actuarial losses (gains) arising from changes in financial assumptions	-775	46
Actuarial losses (gains) arising from changes in demographic assumptions	-4	-4
Actuarial losses (gains) arising from experience adjustments	10	-6
Benefits paid	-70	-58
Benefit obligations at the end of the year	**1,558**	**2,240**
thereof vested	1,301	1,828

€ in millions	2022	2021
Fair value of plan assets at the beginning of the year	**583**	**522**
Foreign currency translation	26	36
Actual return (cost) on plan assets	-117	31
Interest income from plan assets	12	11
Actuarial gains (losses) arising from experience adjustments	-129	20
Contributions by the employer	20	14
Contributions by plan participants	6	5
Settlements	-3	–
Transfer of plan participants	5	10
Gains from divestitures	0	–
Benefits paid	-47	-35
Fair value of plan assets at the end of the year	**473**	**583**
Net funded position as of December 31	**1,085**	**1,657**
Benefit plans offered by other subsidiaries	45	45
Net pension liability as of December 31	**1,130**	**1,702**

As of December 31, 2022, pension liabilities in the amount of €9 million (December 31, 2021: €41 million) related to the members of the Management Board of Fresenius Management SE.

The plan assets are neither invested in the Fresenius Group nor in related parties of the Fresenius Group.

As of December 31, 2022, the fair value of plan assets relating to individual pension plans exceeded the corresponding benefit obligations by a minor total amount. As of December 31, 2021, the fair value of plan assets relating to individual pension plans exceeded the corresponding benefit obligations by €1 million. Furthermore, for the years 2022 and 2021, there were no effects from asset ceiling.

The discount rates for all plans are based upon yields of portfolios of highly rated debt instruments with maturities that mirror the plan's benefit obligation. Fresenius Group's discount rate is the weighted average of these plans based upon their benefit obligations.

The following weighted average assumptions were utilized in determining benefit obligations as of December 31:

in %	2022	2021
Discount rate	4.38	1.66
Rate of compensation increase	2.91	2.80
Rate of pension increase	1.80	1.60

Mainly changes in the discount factor, as well as inflation and mortality assumptions used for the actuarial computation resulted in actuarial losses in 2022 which increased the fair value of the defined benefit obligation. Unrecognized actuarial losses were €294 million (2021: €920 million).

Sensitivity analysis

Increases and decreases in principal actuarial assumptions by 0.5 percentage points would affect the pension liability as of December 31, 2022 as follows:

Development of pension liability € in millions	0.5 pp increase	0.5 pp decrease
Discount rate	-104	117
Rate of compensation increase	17	-16
Rate of pension increase	61	-54

An increase of the mortality rate of 10% would reduce the pension liability by €37 million, while a decrease of 10% would increase the pension liability by €33 million as of December 31, 2022.

The sensitivity analysis was calculated based on the average duration of the pension obligations determined at December 31, 2022. The calculations were performed isolated for each significant actuarial parameter, in order to show the effect on the fair value of the pension liability separately. The sensitivity analysis for compensation increases and for pension increases excludes the U.S. pension plan, because it is frozen and therefore is not affected by changes from these two actuarial assumptions.

Further explanatory notes

Defined benefit pension plans' net periodic benefit costs of €122 million (2021: €107 million) were comprised of the following components:

€ in millions	2022	2021
Service cost	97	84
Net interest cost	25	23
Net periodic benefit cost	**122**	**107**

Net periodic benefit cost is allocated as personnel expense within costs of revenue, selling expenses, general and administrative expenses as well as research and development expenses. The allocation depends upon the area in which the beneficiary is employed.

The following weighted average assumptions were used in determining net periodic benefit cost for the year ended December 31:

in %	2022	2021
Discount rate	2.18	2.02
Rate of compensation increase	2.80	2.93
Rate of pension increase	1.73	1.54

The following table shows the expected benefit payments for the next 10 years:

for the fiscal years	€ in millions
2023	67
2024	71
2025	73
2026	77
2027	80
2028 to 2032	457
Total expected benefit payments	**825**

At December 31, 2022 and at December 31, 2021, the weighted average duration of the defined benefit obligation was 14 and 19 years, respectively.

The fair values of plan assets by categories were as follows:

	December 31, 2022				December 31, 2021			
€ in millions	**Quoted prices in active markets for identical assets Level 1**	**Significant observable inputs Level 2**	**Significant unobservable inputs Level 3**	**Total**	Quoted prices in active markets for identical assets Level 1	Significant observable inputs Level 2	Significant unobservable inputs Level 3	Total
Categories of plan assets								
Equity investments	64	65	–	129	81	85	–	166
Index funds[1]	35	65	–	100	44	85	–	129
Other equity investments	29	–	–	29	37	–	–	37
Fixed income investments	81	176	6	263	103	220	8	331
Government securities[2]	11	0	–	11	21	0	–	21
Corporate bonds[3]	41	170	–	211	29	212	–	241
Other fixed income investments[4]	29	6	6	41	53	8	8	69
Other[5]	69	12	–	81	74	12	–	86
Total	**214**	**253**	**6**	**473**	**258**	**317**	**8**	**583**

[1] This category is mainly comprised of low-cost equity index funds not actively managed that track the S&P 500, S&P 400, Russell 2000, the MSCI Emerging Markets Index and the Morgan Stanley International EAFE Index.
[2] This category is primarily comprised of fixed income investments by the U.S. government and government sponsored entities.
[3] This category primarily represents investment grade bonds of U.S. issuers from diverse industries.
[4] This category is mainly comprised of private placement bonds as well as collateralized mortgage obligations as well as cash and funds that invest in U.S. treasury obligations directly or in U.S. treasury backed obligations.
[5] This category mainly represents cash, money market funds as well as mutual funds comprised of high grade corporate bonds.

The methods and inputs used to measure the fair value of plan assets are as follows:

Index funds are valued based on market quotes.

Other equity investments are valued at their market prices as of the date of the statement of financial position.

Government bonds are valued based on both market prices (Level 1) and market quotes (Level 2).

Corporate bonds and other bonds are valued based on market quotes as of the date of the statement of financial position.

Cash is stated at nominal value which equals the fair value.

U.S. Treasury money market funds as well as other money market and mutual funds are valued at their market prices.

Plan investment policy and strategy in the United States

The Fresenius Group periodically reviews the assumptions for long-term expected return on pension plan assets. As part of the assumptions review, a range of reasonable expected investment returns for the pension plan as a whole was determined based on an analysis of expected future returns for each asset class weighted by the allocation of the assets. The range of returns developed relies both on forecasts, which include the actuarial firm's expected long-term rates of return for each significant asset class or economic indicator, and on broad-market historical benchmarks for expected return, correlation, and volatility for each asset class.

The overall investment strategy for the U.S. pension plan is to achieve a mix of approximately 99% of investments for long-term growth and income and 1% in cash or cash equivalents. Investment income and cash or cash equivalents are used for near-term benefit payments. Investments are governed by the plan investment policy and include well diversified index funds or funds targeting index performance.

The plan investment policy, utilizing a revised target investment allocation in a range around 26% equity and 74% fixed income investments, considers that there will be a time horizon for invested funds of more than five years. The total portfolio will be measured against a custom index that reflects the asset class benchmarks and the target asset allocation. The plan investment policy does not allow investments in securities of Fresenius Medical Care AG & Co. KGaA or other related party securities. The performance benchmarks for the separate asset classes include: S & P 500 Index, S & P 400 Mid-Cap Index, Russell 2000 Index, MSCI EAFE Index, MSCI Emerging Markets Index, Barclays Capital Long-Corporate Bond Index, Bloomberg Barclays U.S. Corporate High Yield Index, and Bloomberg Barclays U.S. High Yield Fallen Angel 3% Capped Index.

The following schedule describes Fresenius Group's allocation for all of its funded plans.

in %	Allocation 2022	Allocation 2021	Target allocation
Equity investments	**27.35**	28.37	26.66
Fixed income investments	**55.39**	57.03	56.95
Other incl. real estate/fonds	**17.26**	14.60	16.39
Total	**100.00**	**100.00**	**100.00**

Contributions to plan assets for the fiscal year 2023 are expected to amount to €18 million.

DEFINED CONTRIBUTION PLANS

Fresenius Group's total expense under defined contribution plans for 2022 was €148 million (2021: €201 million). Of this amount, €114 million related to contributions by the Fresenius Group to several public supplementary pension funds for employees of Fresenius Helios. This includes €25 million for contributions related to financing the deficit of past service costs. Further €77 million related to contributions to the U.S. savings plan, which employees of Fresenius Medical Care Holdings, Inc. can join.

In accordance with applicable collective bargaining agreements, the Fresenius Group pays contributions for a given number of employees of Fresenius Helios to the Rheinische Zusatzversorgungskasse (a supplementary pension fund) and to other public supplementary pension funds (together referred to as ZVK ÖD) to complement statutory retirement pensions. Given that employees from multiple participating entities are insured by these ZVK ÖDs, these plans are considered Multi-Employer plans.

ZVK ÖDs are defined benefit plans according to IAS 19 since employees are entitled to the statutory benefits regardless of the amounts contributed. The plan assets of the fund necessary to evaluate and calculate the funded status of the Group cannot be obtained from the supplementary pension funds and therefore due to the missing information about future payment obligations, the calculation of a pension liability in accordance with IAS 19 is not possible. Therefore, the obligation is accounted for as defined contribution plan in accordance with IAS 19.34a. The contributions are collected as part of a pay-as-you-go system and are based upon applying a fixed rate to given parts of the employees' gross remuneration.

Paid contributions are accounted for as personnel expenses within costs of revenue, selling expenses as well as general and administrative expenses and amounted to €114 million in 2022 (2021: €111 million). Thereof, €66 million (2021: €64 million) were payments to Rheinische Zusatzversorgungskasse, to Versorgungsanstalt des Bundes und der Länder and to Zusatzversorgungskasse Baden-Württemberg (2021: Rheinische Zusatzversorgungskasse, Versorgungsanstalt des Bundes und der Länder and Zusatzversorgungskasse Baden-Württemberg) (supplementary pension funds). The Group expects to contribute in 2023 €124 million (including payments relating to past service costs).

Under the U.S. savings plan, employees can deposit up to 75% of their pay up to an annual maximum of US$22,500 if under 50 years old (US$30,000 if 50 or over). Fresenius Medical Care will match 50% of the employee deposit up to a maximum company contribution of 3% of the employee's pay. Fresenius Medical Care's total expense under this defined contribution plan for the years ended December 31, 2022 and 2021 was €77 million and €68 million, respectively.

27. NONCONTROLLING INTERESTS

As of December 31, noncontrolling interests in the Fresenius Group were as follows:

€ in millions	2022	2021
Noncontrolling interests in Fresenius Medical Care AG & Co. KGaA	9,489	8,609
Noncontrolling interests in VAMED Aktiengesellschaft	76	88
Noncontrolling interests in the business segments		
Fresenius Medical Care	1,460	1,280
Fresenius Kabi	602	161
Fresenius Helios	155	134
Fresenius Vamed	21	18
Total noncontrolling interests	**11,803**	**10,290**

The increase of noncontrolling interests of Fresenius Medical Care mainly relates to currency translation and the InterWell Health business combination.

For further financial information relating to Fresenius Medical Care see the consolidated segment reporting on pages 294 to 296.

The increase of noncontrolling interests of Fresenius Kabi mainly results from the acquisition of a stake of 55% of mAbxience (see note 2, Acquisitions, divestitures and investments).

Accumulated other comprehensive income (loss) allocated to noncontrolling interests mainly relates to currency effects from the translation of foreign operations. For changes in noncontrolling interests, please see the consolidated statement of changes in equity.

28. FRESENIUS SE & CO. KGAA SHAREHOLDERS' EQUITY

SUBSCRIBED CAPITAL

Development of subscribed capital

As of January 1, 2022, the subscribed capital of Fresenius SE & Co. KGaA consisted of 558,502,143 bearer ordinary shares.

On June 9, 2022, Fresenius SE & Co. KGaA successfully completed a capital increase in kind with subscription rights in return for the contribution of dividend entitlements as part of the share dividend. In connection with the capital increase, 4,735,134 new bearer ordinary shares were issued and the subscribed capital was increased by €4,735,134 to €563,237,277. The new shares have full dividend entitlement for fiscal year 2022 and have been admitted for trading on the stock exchange.

During the fiscal year 2022, no stock options were exercised. Consequently, as of December 31, 2022, the subscribed capital of Fresenius SE & Co. KGaA consisted of 563,237,277 bearer ordinary shares. The shares are issued as non-par value shares. The proportionate amount of the subscribed capital is €1.00 per share.

AUTHORIZED CAPITAL

By resolution of the Annual General Meeting on May 13, 2022, the previous Authorized Capital I was revoked and a new Authorized Capital I (2022) was approved.

Accordingly, the general partner, Fresenius Management SE, is authorized, with the approval of the Supervisory Board, until May 12, 2027, to increase Fresenius SE & Co. KGaA 's share capital (subscribed capital) by a total amount of up to €125,000,000 through a single or multiple issues of new bearer ordinary shares against cash contributions and / or contributions in kind (Authorized Capital I (2022)). The number of shares must increase in the same proportion as the subscribed capital. In principle, shareholders must be granted a subscription right . In defined cases, the general partner is authorized, with the consent of the Supervisory Board, to decide on the exclusion of the shareholders' subscription right (e. g. to eliminate fractional amounts). For cash contributions, the authorization can only be exercised if the issue price is not significantly below the stock exchange price of the already listed shares at the time the issue price is fixed with final effect by the general partner. Furthermore, in case of a capital increase against cash contributions, the proportionate amount of the shares issued with exclusion of subscription rights may not exceed 10% of the subscribed capital. An exclusion of subscription rights in the context of the use of other authorizations concerning the issuance or the sale of the shares of Fresenius SE & Co. KGaA or the issuance of rights which authorize or bind to the subscription of shares of Fresenius SE & Co. KGaA has to be taken into consideration during the duration of the Authorized Capital until its utilization. In the case of a subscription in kind, the subscription right can be excluded only in order to acquire a company, parts of a company or a participation in a company.

The authorizations granted concerning the exclusion of subscription rights can be used by Fresenius Management SE only to such extent that the proportional amount of the total number of shares issued with exclusion of the subscription rights does not exceed 10% of the subscribed capital. An exclusion of subscription rights in the context of the use of other authorizations concerning the issuance or the sale of the shares of Fresenius SE & Co. KGaA or the issuance of rights which authorize or bind to the subscription of shares of Fresenius SE & Co. KGaA has to be taken into consideration during the duration of the Authorized Capital until its utilization.

The changes to the Authorized Capital I became effective upon registration with the commercial register on July 5, 2022.

CONDITIONAL CAPITAL

In order to fulfill the subscription right under the current stock option plan 2013 of Fresenius SE & Co. KGaA, Conditional Capital IV exists (see note 36, Share-based compensation plans). Another Conditional Capital III exists for the authorization to issue option bearer bonds and / or convertible bonds.

This authorization from May 18, 2018 was revoked by resolution of the Annual General Meeting of Fresenius SE & Co. KGaA on May 13, 2022 and replaced by an identical new Conditional Capital III with a five-year term.

Accordingly, the general partner is authorized, with the approval of the Supervisory Board, until May 12, 2027, to issue option bearer bonds and / or convertible bearer bonds, once or several times, for a total nominal amount of up to €2.5 billion. To fulfill the granted subscription rights, the subscribed capital of Fresenius SE & Co. KGaA is increased conditionally by up to €48,971,202 through issuing of up to 48,971,202 new bearer ordinary shares. The conditional capital increase shall only be implemented to the extent that the holders of cash issued convertible bonds or of cash issued warrants from option bonds exercise their conversion or option rights and as long as no other forms of settlement are used. The new bearer ordinary shares shall participate in the profits from the start of the fiscal year in which they are issued.

The new Conditional Capital III became effective upon registration with the commercial register on July 5, 2022.

The Conditional Capital did not change in 2022. It was composed as follows as of December 31, 2022:

in €	Ordinary shares
Conditional Capital I Fresenius AG Stock Option Plan 2003 (expired)	4,735,083
Conditional Capital II Fresenius SE Stock Option Plan 2008 (expired)	3,452,937
Conditional Capital III option bearer bonds and/or convertible bonds	48,971,202
Conditional Capital IV Fresenius SE & Co. KGaA Stock Option Plan 2013	22,824,857
Total Conditional Capital as of December 31, 2022	**79,984,079**

CAPITAL RESERVES

Capital reserves are comprised of the premium paid on the issue of shares and the exercise of stock options (additional paid-in capital) as well as changes relating to transactions with noncontrolling interests without loss of control. Additional paid-in capital increased primarily as a result of the business combination of InterWell Health (see note 2, Acquisitions, divestitures and investments) as well as other purchases of noncontrolling interests in dialysis clinics in the United States.

In the first half of 2022, the capital reserves increased by €142 million in connection with the capital increase of the subscribed capital. The accrued expenses in an amount of €0.8 million were charged against the capital reserves.

OTHER RESERVES

Other reserves are comprised of earnings generated by Group entities in prior years to the extent that they have not been distributed.

DIVIDENDS

Under the German Stock Corporation Act (AktG), the amount of dividends available for distribution to shareholders is based upon the unconsolidated retained earnings of Fresenius SE & Co. KGaA as reported in its statement of financial position determined in accordance with the German Commercial Code (HGB).

In May 2022, a dividend of €0.92 per bearer ordinary share was approved by Fresenius SE & Co. KGaA's shareholders at the Annual General Meeting. The total dividend was €514 million. The shareholders had the opportunity to exchange a portion of the dividend (Dividend Option Portion) for Fresenius SE & Co. KGaA shares. In June 2022, €147 million in dividend entitlements for new shares were distributed from authorized capital and therefore not substituted for cash. The remaining portion of the dividend in the amount of €367 million was paid in cash in June 2022. Thereby, the Else Kröner-Fresenius-Stiftung was paid the dividend which it is entitled to as a shareholder in the ordinary share capital of Fresenius SE & Co. KGaA in both, pro rata, shares and in cash.

29. OTHER COMPREHENSIVE INCOME (LOSS)

Other comprehensive income (loss) is comprised of all amounts recognized directly in equity (net of tax) resulting from the currency translation of foreign subsidiaries' financial statements and the effects of measuring financial instruments at their fair value as well as the change in benefit obligation.

Changes in the components of other comprehensive income (loss) in 2022 and 2021 were as follows:

€ in millions	Amount before taxes	Tax effect	Amount after taxes
Positions which will be reclassified into net income in subsequent years			
Cash flow hedges	-6	2	-4
Change in unrealized gains/losses	-22	5	-17
Realized gains/losses due to reclassifications	16	-3	13
FVOCI debt instruments	-10	2	-8
Foreign currency translation	1,475	4	1,479
Positions which will not be reclassified into net income in subsequent years			
FVOCI equity investments	-28	8	-20
Equity method investees - share of OCI	-23	0	-23
Actuarial gains/losses on defined benefit pension plans	-15	8	-7
Total changes 2021	**1,393**	**24**	**1,417**
Positions which will be reclassified into net income in subsequent years			
Cash flow hedges	23	-5	18
Change in unrealized gains/losses	18	-3	15
Realized gains/losses due to reclassifications	5	-2	3
FVOCI debt instruments	-45	8	-37
Foreign currency translation	1,143	3	1,146
Positions which will not be reclassified into net income in subsequent years			
FVOCI equity investments	9	-1	8
Equity method investees - share of OCI	24	-1	23
Actuarial gains/losses on defined benefit pension plans	640	-182	458
Total changes 2022	**1,794**	**-178**	**1,616**

OTHER NOTES

30. COMMITMENTS AND CONTINGENCIES

As of December 31, 2022, future investment commitments existed in respect to acquired hospitals, which are projected to amount up to €54 million until 2024. Thereof €27 million relate to the year 2023.

As of December 31, 2021, future investment commitments existed in respect to acquired hospitals, which are projected to amount up to €70 million until 2024. No investment commitments related to the year 2022.

In addition to the contingent liabilities mentioned above, there are contingent contractual commitments from continuing obligations and service contracts in the customary scope of business.

LEGAL AND REGULATORY MATTERS

The Fresenius Group is routinely involved in claims, lawsuits, regulatory and tax audits, investigations and other legal matters arising, for the most part, in the ordinary course of its business of providing healthcare services and products. Legal matters that the Fresenius Group currently deems to be material or noteworthy are described below. The Fresenius Group records its litigation reserves for certain legal proceedings and regulatory matters to the extent that the Fresenius Group determines an unfavorable outcome is probable and the amount of loss can be reasonably estimated. For the other matters described below, the Fresenius Group believes that the loss is not probable and/or the loss or range of possible losses cannot be reasonably estimated at this time.

The outcome of litigation and other legal matters is always difficult to predict accurately and outcomes that are not consistent with Fresenius Group's view of the merits can occur. The Fresenius Group believes that it has valid defenses to the legal matters pending against it and is defending itself vigorously. Nevertheless, it is possible that the resolution of one or more of the legal matters currently pending or threatened could have a material adverse effect on its business, results of operations and financial condition.

Internal review / FCPA Compliance

Beginning in 2012, Fresenius Medical Care AG & Co. KGaA (FMC-AG & Co. KGaA) received certain communications alleging conduct in countries outside the United States that might violate the U.S. Foreign Corrupt Practices Act (FCPA) or other anti-bribery laws. FMC-AG & Co. KGaA conducted investigations with the assistance of outside counsel and, in a continuing dialogue, advised the Securities and Exchange Commission (SEC) and the United States Department of Justice (DOJ) about these investigations. The DOJ and the SEC also conducted their own investigations, in which FMC-AG & Co. KGaA cooperated.

In the course of this dialogue, FMC-AG & Co. KGaA identified and reported to the DOJ and the SEC, and took remedial actions with respect to, conduct that resulted in the DOJ and the SEC seeking monetary penalties including disgorgement of profits and other remedies. This conduct revolved principally around FMC-AG & Co. KGaA's products business in countries outside the United States.

On March 29, 2019, FMC-AG & Co. KGaA entered into a non-prosecution agreement (NPA) with the DOJ and a separate agreement with the SEC (SEC Order) intended to resolve fully and finally the U.S. government allegations against FMC-AG & Co. KGaA arising from the investigations. Both agreements included terms starting August 2, 2019. In 2019, FMC-AG & Co. KGaA paid a combined total in penalties and disgorgement of approximately US$232 million (€206 million) to the DOJ and the SEC in connection with these agreements. The entire amount paid to the DOJ and the SEC was reserved for in charges that FMC-AG & Co. KGaA recorded in 2017 and 2018 and announced in 2018. As part of the resolution, FMC-AG & Co. KGaA agreed to certain self-reporting obligations and to retain an independent compliance monitor (the Monitor). Due in part to COVID-19 pandemic restrictions, the monitorship faced certain delays, but FMC-AG & Co. KGaA is working to complete all its obligations under the resolution with the DOJ and SEC. The Monitor certified to FMC-AG & Co. KGaA's implementation of an effective anti-corruption compliance program on December 30, 2022, and submitted her final certification report on January 31, 2023. Subject to a review of that report, the DOJ and SEC will accept or reject the Monitor's certification. Assuming certification is accepted, the NPA and SEC Order are expected to terminate on March 31, 2023.

In 2015, FMC-AG & Co. KGaA self-reported to the German prosecutor conduct with a potential nexus to Germany and continues to cooperate with government authorities in Germany in their review of the conduct that prompted FMC-AG & Co. KGaA's and United States government investigations.

Since 2012, FMC-AG & Co. KGaA has made and continues to make further significant investments in its compliance and financial controls and in its compliance, legal and financial organizations. FMC-AG & Co. KGaA's remedial actions included separation from those employees responsible for the above-mentioned conduct. FMC-AG & Co. KGaA is dealing with post- FCPA review matters on various levels. FMC-AG & Co. KGaA continues to be fully committed to compliance with the FCPA and other applicable anti-bribery laws.

Product liability litigation

Personal injury and related litigation involving Fresenius Medical Care Holding Inc.'s (FMCH) acid concentrate product, labeled as Granuflo® or Naturalyte®, first arose in 2012. FMCH's insurers agreed to the settlement in 2017 of personal injury litigation and funded US$220 million (€179 million) of the total US$250 million (€204 million) settlement under a reciprocal reservation of rights. FMCH accrued a net expense of US$60 million (€49 million) in connection with the settlement, encompassing its contribution of US$30 million (€24.5 million) to the personal injury settlement plus US$30 million (€24.5 million) in related but uninsured fees and costs. Following the settlement, FMCH's insurers in the AIG group initiated litigation against FMCH seeking to be indemnified by FMCH for their US$220 million (€179 million) outlay and FMCH initiated litigation against the AIG group to recover defense and indemnification costs FMCH had borne. National Union Fire Insurance v. Fresenius Medical Care, 2016 Index No. 653108 (Supreme Court of New York for New York County).

As litigation proceeded, the parties refined their positions, resulting in AIG requesting recovery of approximately US$60 million (€49 million) of its settlement outlay and FMCH requesting US$108 million (€88 million) in defense fees and costs. The parties filed multiple, crossing motions for summary judgment. On January 12, 2023, the trial court decided these motions. Among its rulings, the court largely rejected both FMCH's theories for recovering defense costs and AIG's theories for recovering settlement funding. However, the trial court denied both parties' motions on one issue and severed and continued that issue for trial. The issue to be tried relates to FMCH's exhaustion of deductible obligations for, and weightings of, policy years to be considered in allocating between AIG and FMCH the US$250 million (€204 million) paid as a single, aggregate sum to resolve the personal injury litigation as a whole. As related to this one issue in isolation, AIG's motion, had it prevailed, would have supported AIG's recovering approximately US$48 million (€45 million); FMCH's corresponding motion would have resulted in no recovery for AIG. With both motions having been denied, neither party has indicated its position for trial. No date has been set for trial. Following trial, appeals may be pursued on all rulings by the trial court.

Subpoena "Maryland"

In August 2014, Fresenius Medical Care Holdings, Inc. (FMCH) received a subpoena from the United States Attorney's Office (USAO) for the District of Maryland inquiring into FMCH's contractual arrangements with hospitals and physicians involving contracts relating to the management of in-patient acute dialysis services. Thereafter, the USAO conducted an investigation, in which FMCH cooperated, and declined to intervene in the matter. After the United States District Court for Maryland unsealed the 2014 relator's qui tam complaint that gave rise to the investigation, the relator served the complaint and proceeded on his own by filing an amended complaint, which FMCH moved to dismiss on multiple grounds. On October 5, 2021, on FMCH's venue motion, the District Court for Maryland transferred the case to the United States District Court for Massachusetts. Flanagan v. Fresenius Medical Care Holdings, Inc., 1:21-cv-11627. On December 5, 2022, the Massachusetts District Court granted FMCH's motion and dismissed the case with prejudice. Relator has filed a motion to reconsider and asserted his intent to appeal.

Civil complaint "Hawaii"

In July 2015, the Attorney General for Hawaii issued a civil complaint under the Hawaii False Claims Act alleging a conspiracy pursuant to which certain Liberty Dialysis subsidiaries of Fresenius Medical Care Holdings, Inc. (FMCH) overbilled Hawaii Medicaid for Liberty's Epogen® administrations to Hawaii Medicaid patients during the period from 2006 through 2010, prior to the time of FMCH's acquisition of Liberty. Hawaii v. Liberty Dialysis - Hawaii, LLC et al., Case No. 15-1-1357-07 (Hawaii 1st Circuit). The State alleged that Liberty acted unlawfully by relying on incorrect and unauthorized billing guidance provided to Liberty by Hawaii's contracted administrator for its Medicaid program. Liberty initiated an administrative action challenging the State's recoupment of alleged overpayments from sums currently owed to Liberty. On June 7, 2022, FMCH and Hawaii entered into an agreement under which FMCH paid Hawaii US$13 million (€12 million) in restitution and interest and all claims, counterclaims, and cross-claims raised by or against FMCH in any part of the litigation were extinguished.

Subpoenas "Colorado and New York"

On August 31, 2015, Fresenius Medical Care Holdings, Inc. (FMCH) received a subpoena under the False Claims Act from the United States Attorney for the District of Colorado (Denver) inquiring into FMCH's participation in and management of dialysis facility joint ventures in which physicians are partners. FMCH cooperated in the Denver USAO investigation, which FMCH understands had concluded on or before June 1, 2022.

On November 25, 2015, FMCH received a subpoena under the False Claims Act from the United States Attorney for the Eastern District of New York (Brooklyn) inquiring into FMCH's involvement in certain dialysis facility joint ventures in New York. After the Brooklyn USAO completed its investigation, in which FMCH cooperated, and declined to intervene on the qui tam complaint that gave rise to the investigation, the relator proceeded with litigation on its own. CKD Project LLC v. Fresenius Medical Care, 2014 Civ. 06646 (E.D.N.Y. November 12, 2014). On August 3, 2021, the District Court granted FMCH's motion to dismiss the relator's amended complaint, dismissed the case with prejudice and declined to allow further amendment. On December 20, 2022, the United States Court of Appeals for the Second Circuit denied the relator's appeal and affirmed the dismissal. The relator's petition for rehearing en banc was denied.

Subpoena "Fresenius Vascular Care" (AAC)

In 2014, two New York physicians filed under seal a qui tam complaint in the United States District Court for the Eastern District of New York (Brooklyn), alleging violations of the False Claims Act relating to Fresenius Medical Care Holdings, Inc.'s (FMCH) vascular access line of business. As previously disclosed, on October 6, 2015, the United States Attorney for the Eastern District of New York (Brooklyn) issued subpoenas to FMCH indicating its investigation now seen to be related to the two relators' complaint. FMCH cooperated in the Brooklyn investigation, which was understood to be separate and distinct from settlements entered in 2015 in Connecticut, Florida and Rhode Island of allegations against American Access Care LLC (AAC) following FMCH's 2011 acquisition of AAC.

On July 12, 2022, after the Court denied the United States Attorney's Office's (USAO) motions to renew the sealing of the relators' complaint, the USAO filed a complaint-in-intervention. United States ex rel. Pepe and Sherman v. Fresenius Vascular Care, Inc. et al, 1:14-cv-3505. The United States' and relators' complaints allege that the defendants billed and received government payment for surgery that was not medically necessary. FMCH expects to defend the allegations asserted in the litigation now proceeding.

Subpoena "New York" (Shiel)

On November 18, 2016, Fresenius Medical Care Holdings, Inc. (FMCH) received a subpoena under the False Claims Act from the United States Attorney for the Eastern District of New York (Brooklyn) seeking documents and information relating to the operations of Shiel Medical Laboratory, Inc. (Shiel), which FMCH acquired in October 2013. FMCH advised the USAO that, under the asset sale provisions of its 2013 Shiel acquisition, it was not responsible for Shiel's conduct prior to the date of the acquisition. On December 12, 2017, FMCH sold to Quest Diagnostics certain Shiel operations. Nonetheless, FMCH cooperated in the Brooklyn USAO's investigation.

On June 14, 2022, the Brooklyn USAO declined to intervene on two anonymous relator complaints that underlay the investigation. The relators, who remain anonymous, are proceeding with litigation at their own expense against both Shiel and FMCH entities, alleging that the defendants wrongly caused government payers to pay for laboratory tests that were falsely or improperly invoiced and retaliated against relators for objecting to the alleged misconduct. Relator v. Shiel Medical Laboratory, 1:16-cv-01090 (E.D.N.Y. 2016); Relator v. Shiel Holdings, 1:17-cv-02732 (E.D.N.Y. 2017). FMCH will defend allegations directed against entities it controls.

Vifor patent infringement Fresenius Medical Care (Delaware)

On March 12, 2018, Vifor Fresenius Medical Care Renal Pharma Ltd. and Vifor Fresenius Medical Care Renal Pharma France S.A.S. (collectively, VFMCRP), filed a complaint for patent infringement against Lupin Atlantis Holdings SA and Lupin Pharmaceuticals Inc. (collectively, Lupin), and Teva Pharmaceuticals USA, Inc. (Teva) in the U.S. District Court for the District of Delaware (Case 1:18-cv-00390-MN, first complaint). The patent infringement action is in response to Lupin and Teva's filings of Abbreviated New Drug Applications (ANDA) with the U.S. Food and Drug Administration (FDA) for generic versions of Velphoro®. Velphoro® is protected by patents listed in the FDA's Approved Drug Products with Therapeutic Equivalence Evaluations, also known as the Orange Book. The complaint was filed within the 45-day period provided for under the Hatch-Waxman legislation, and triggered a stay of FDA approval of the ANDAs for 30 months (specifically, up to July 29, 2020 for Lupin's ANDA; and August 6, 2020 for Teva's ANDA. In response to another ANDA being filed for a generic Velphoro®, VFMCRP filed a complaint for patent infringement against Annora Pharma Private Ltd., and Hetero Labs Ltd. (collectively, Annora), in the U.S. District Court for the District of Delaware on December 17, 2018. The case was settled among the parties, thus terminating the court action on August 4, 2020. On May 26, 2020, VFMCRP filed a further complaint for patent infringement against Lupin in the U.S. District Court for the District of Delaware (Case No. 1:20-cv-00697-MN) in response to Lupin's ANDA for a generic version of Velphoro® and on the basis of a newly listed patent in the Orange Book. On July 6, 2020, VFMCRP filed an additional complaint for patent infringement against Lupin and Teva in the U.S. District Court for the District of Delaware (Case No. 1:20-cv-00911-MN, second complaint) in response to the companies' ANDA for generic versions of Velphoro® and on the basis of two newly listed patents in the Orange Book. All cases involving Lupin as defendant were settled among the parties, thus terminating the corresponding court actions on December 18, 2020. In relation to the remaining pending cases and the defendant Teva, trial took place for the first complaint between January 19 and 22, 2021. Another patent newly listed in the Orange Book was added to the second complaint on June 23, 2021. Trial was scheduled for the second complaint for late June 2022, but was cancelled on June 14, 2022. By final judgement dated August 25, 2022, the Court decided for the first complaint that the generic product proposed in Teva's ANDA infringes the patent claims subject to the complaint and that such patent claims are valid. Further, unless the order is overturned or the parties agree otherwise, the effective date of any final approval by the FDA for Teva's ANDA shall not be a date until the underlying patent, including any pediatric extension, expires. On September 21, 2022, Teva filed an appeal to the U.S. Court of Appeals for the Federal Circuit to contest the first instance Court decision. Also on September 21, 2022, VFMCRP filed another complaint for patent infringement against Teva in the U.S. District Court for the District of Delaware (Case No. 1:22-cv-01227-MN, third complaint) in response to the company's ANDA for generic versions of Velphoro® and on the basis of another newly listed patent in the Orange Book. On October 4, 2022, a motion to stay the proceedings of the second complaint until the appeal for the first complaint is resolved was granted by the first instance Court. All cases involving Teva as defendant were settled among the parties, thus terminating the corresponding court actions on February 6, 2023 (second and third complaint) and February 7, 2023 (appeal first complaint).

Subpoena "Colorado (Denver)"

On December 17, 2018, Fresenius Medical Care Holdings, Inc. (FMCH) was served with a subpoena under the False Claims Act from the United States Attorney for the District of Colorado (Denver) as part of an investigation of allegations against DaVita, Inc. (DaVita) involving transactions between FMCH and DaVita. The subject transactions include sales and purchases of dialysis facilities, dialysis-related products and pharmaceuticals, including dialysis machines and dialyzers, and contracts for certain administrative services. FMCH cooperated in the investigation.

Litigation Tricare Program

On June 28, 2019, certain Fresenius Medical Care Holdings, Inc. (FMCH) subsidiaries filed a complaint against the United States seeking to recover monies owed to them by the United States Department of Defense under the Tricare program, and to preclude Tricare from recouping monies previously paid. Bio-Medical Applications of Georgia, Inc., et al. v. United States, CA 19-947, United States Court of Federal Claims. Tricare provides reimbursement for dialysis treatments and other medical care provided to members of the military services, their dependents and retirees. The litigation challenges unpublished administrative actions by Tricare administrators reducing the rate of compensation paid for dialysis treatments provided to Tricare beneficiaries based on a recasting or "crosswalking" of codes used and followed in invoicing without objection for many years. Tricare administrators have acknowledged the unpublished administrative action and declined to change or abandon it. On July 8, 2020, the U.S. government filed its answer (and confirmed its position) and litigation is continuing. The court has not yet set a date for trial in this matter. FMCH has imposed a constraint on revenue otherwise recognized from the Tricare program that it believes, in consideration of facts currently known, sufficient to account for the risk of this litigation.

Subpoena "Massachusetts ChoiceOne and Medspring"

On August 21, 2020, Fresenius Medical Care Holdings, Inc. (FMCH) was served with a subpoena from the United States Attorney for the District of Massachusetts requesting information and documents related to urgent care centers that FMCH owned, operated, or controlled as part of its ChoiceOne and Medspring urgent care operations prior to its divestiture of and exit from that line of business in 2018. The subpoena appears to be related to an ongoing investigation of alleged upcoding in the urgent care industry, which has resulted in certain published settlements under the federal False Claims Act. FMCH cooperated in the investigation.

HBDI Request

In February 2022, Fresenius Medical Care AG & Co. KGaA (FMC-AG & Co. KGaA) received a formal request for information from the Hessen Data Protection Authority (Hessischer Beauftragter für Datenschutz und Informationsfreiheit or HBDI). The information request relates to specific data processing functions of a few of FMC-AG & Co. KGaA's peritoneal dialysis devices. FMC-AG & Co. KGaA is committed to comply with the HBDI's request and cooperate with them, and it is working to provide the relevant information.

OSHA Complaint

On March 20 and April 12, 2022, respectively, an attorney employed as general counsel for Fresenius Medical Care AG & Co. KGaA's (FMC-AG & Co. KGaA) North American division from 2013 to 2016 filed a complaint with the Occupational Safety and Health Administration (OSHA) under the Sarbanes-Oxley Act of 2002 and other anti-retaliation statutes, and a civil lawsuit in Suffolk County, Massachusetts seeking compensation for personnel management decisions allegedly adverse to him. OSHA Case No. 1-076-22-049; Kott v. National Medical Care, Inc., Case No. 22-802 (Superior Court, Suffolk County, Mass.).

The plaintiff alleges in support of his demands for compensation that he was transferred to a subordinate position in the global legal department, and subsequently terminated from employment as part of the FME25 Program, in retaliation for legal advice he provided with respect to a licensing agreement with DaVita relating to pharmaceutical operations and products. The DaVita licensing agreement expired by its terms in 2017.

As previously disclosed in FMC-AG & Co. KGaA's financial statements, the United States Department of Justice has reviewed multiple aspects of the DaVita contract in question, including those relevant to the plaintiff's allegations. No enforcement action has resulted against FMC-AG & Co. KGaA.

Other bases of retaliation alleged by the plaintiff implicate internal personnel and privacy protection concerns that do not impact ongoing operations, and on which FMC-AG & Co. KGaA does not comment.

Subpoena "American Kidney Foundation"

On January 3, 2023, Fresenius Medical Care Holdings, Inc. (FMCH) received a subpoena from the Attorney General for the District of Columbia related to the activities of the American Kidney Foundation (AKF) and grounded in antitrust concerns, including market allocation within the District of Columbia. FMCH's relationship with AKF was the subject of previously reported, but resolved, investigation by agencies of the United States and litigation against United Healthcare. FMCH is cooperating in the District of Columbia investigation.

Subpoena "Nevada"

In November 2014, Fresenius Kabi Oncology Limited (FKOL) received a subpoena from the U.S. Department of Justice (DOJ), U.S. Attorney for the District of Nevada. The subpoena requested documents in connection with the January 2013 inspection by the U.S. Food and Drug Administration (FDA) of FKOL's plant for active pharmaceutical ingredients in Kalyani, India. That inspection resulted in a warning letter from the FDA in July 2013. The subpoena marked the DOJ's criminal and/or civil investigation in this connection and sought information from throughout the Fresenius Kabi group. Fresenius Kabi fully cooperated with the governmental investigation. In January 2021, Fresenius Kabi has entered into a final agreement (Plea Agreement) with the DOJ in which Fresenius Kabi undertakes to make a penalty payment of US$50 million. The agreement includes other measures to ensure that a misconduct of the nature detected in 2013 will not occur again in the future. The final agreement has received court sentencing and was implemented accordingly. The payment was made on the basis of an existing accrual.

Patent Dispute Fresenius Kabi France

Patent dispute between Fresenius Kabi and Eli Lilly in France and other European countries regarding Eli Lilly's originator product Alimta® and Fresenius Kabi's generic Pemetrexed sold in France and further countries in Europe. The Paris Tribunal has now rendered a decision in favor of Eli Lilly holding Fresenius Kabi France to infringe Eli Lilly's patent and to make a preliminary payment of €28 million for patent infringement and damages due to unfair competition, including lost revenues and price decrease. This amount was initially covered by an existing higher accrual. In March 2021, Fresenius Kabi and Eli Lilly have entered into a pan-European settlement pursuant to which, among other provisions, Fresenius Kabi undertakes to make a payment of US$68.5 million to Lilly less the amount of €28 million already paid during the proceedings in France. In parallel, all court proceedings pending in Europe in relation to the patent in dispute are discontinued by the parties, including the proceedings in France. As of June 30, 2021, Fresenius Kabi has made all payments required under the settlement agreement.

General risks

From time to time, the Fresenius Group is a party to or may be threatened with other litigation or arbitration, claims or assessments arising in the ordinary course of its business. Management regularly analyzes current information including, as applicable, the Fresenius Group's defenses and insurance coverage and, as necessary, provides accruals for probable liabilities for the eventual disposition of these matters.

The Fresenius Group, like other healthcare providers, insurance plans and suppliers, conducts its operations under intense government regulation and scrutiny. The Fresenius Group must comply with regulations which relate to or govern the safety and efficacy of medical products and supplies, the marketing and distribution of such products, the operation of manufacturing facilities, laboratories, hospitals, dialysis clinics and other healthcare facilities, and environmental and occupational health and safety. With respect to its development, manufacture, marketing and distribution of medical products, if such compliance is not maintained, the Fresenius Group could be subject to significant adverse regulatory actions by the U.S. Food and Drug Administration (FDA) and comparable regulatory authorities outside the United States. These regulatory actions could include warning letters or other enforcement notices from the FDA, and / or comparable foreign regulatory authority which may require the Fresenius Group to expend significant time and resources in order to implement appropriate corrective actions. If the Fresenius Group does not address matters raised in warning letters or other enforcement notices to the satisfaction of the FDA and / or comparable regulatory authorities outside the United States, these regulatory authorities could take additional actions, including product recalls, injunctions against the distribution of products or operation of manufacturing plants, civil penalties, seizures of the Fresenius Group's products and / or criminal prosecution. Fresenius Medical Care Holdings, Inc. completed remediation efforts with respect to one pending FDA warning letter and is awaiting confirmation as to whether the letter is now closed. Fresenius Kabi is currently engaged in remediation efforts with respect to two pending FDA warning letters. On April 21, 2022, Fresenius Medical Care Holdings, Inc. (FMCH) paused shipping of new dialysis machines in the United States at the recommendation of the U.S. Food and Drug Administration (FDA) following FMCH's voluntary report of a potential bio-compatibility concern. The concern arose from a component that was already scheduled to be replaced later in 2022. As of October 28, 2022, FMCH received clearance from the FDA encompassing the replacement component and resumed shipping machines.

The Fresenius Group must also comply with the laws of the United States, including the federal Anti-Kickback Statute, the federal False Claims Act, the federal Stark Law, the federal Civil Monetary Penalties Law and the federal Foreign Corrupt Practices Act as well as other federal and state fraud and abuse laws. Applicable laws or regulations may be amended, or enforcement agencies or courts may make interpretations that differ from the Fresenius Group's interpretations or the manner in which it conducts its business. Enforcement has become a high priority for the federal government and some states. In addition, the provisions of the False Claims Act authorizing payment of a portion of any recovery to the party bringing the suit encourage private plaintiffs to commence whistleblower actions. By virtue of this regulatory environment, the Fresenius Group's business activities and practices are subject to extensive review by regulatory authorities and private parties, and continuing audits, subpoenas, other inquiries, claims and litigation relating to the Fresenius Group's compliance with applicable laws and regulations. The Fresenius Group may not always be aware that an inquiry or action has begun, particularly in the case of whistleblower actions, which are initially filed under court seal.

The Fresenius Group operates many facilities and handles the personal data of its patients and beneficiaries throughout the United States and other parts of the world, and engages with other business associates to help it carry out its healthcare activities. In such a widespread, global system, it is often difficult to maintain the desired level of oversight and control over the thousands of individuals employed by many affiliated companies and its business associates. On occasion, the Fresenius Group or its business associates may experience a breach under the Health Insurance Portability and Accountability Act Privacy Rule and Security Rules, the EU's General Data Protection Regulation or other similar laws (Data Protection Laws) when there has been impermissible use, access, or disclosure of unsecured personal data or when the Fresenius Group or its business associates neglect to implement the required administrative, technical and physical safeguards of its electronic systems and devices, or a data breach that results in impermissible use, access or disclosure of personal identifying information of its employees, patients and beneficiaries. On those occasions, the Fresenius Group must comply with applicable breach notification requirements. The Fresenius Group relies upon its management structure, regulatory and legal resources, and the effective operation of its compliance program to direct, manage and monitor the activities of its employees. On occasion, the Fresenius Group may identify instances where employees or other agents deliberately, recklessly or inadvertently contravene the Fresenius Group's policies or violate applicable law. The actions of such persons may subject the Fresenius Group and its subsidiaries to liability under the Anti-Kickback Statute, the Stark Law, the False Claims Act, Data Protection Laws, the Health Information Technology for Economic and Clinical Health Act and the Foreign Corrupt Practices Act, among other laws and comparable state laws or laws of other countries.

Physicians, hospitals and other participants in the health care industry are also subject to a large number of lawsuits alleging professional negligence, malpractice, product liability, worker's compensation or related claims, many of which involve large claims and significant defense costs. The Fresenius Group has been and is currently subject to these suits due to the nature of its business and expects that those types of lawsuits may continue. Although the Fresenius Group maintains insurance at a level which it believes to be prudent, it cannot assure that the coverage limits will be adequate or that insurance will cover all asserted claims. A successful claim against the Fresenius Group or any of its subsidiaries in excess of insurance coverage could have a material adverse effect upon it and the results of its operations. Any claims, regardless of their merit or eventual outcome, could have a material adverse effect on the Fresenius Group's reputation and business.

The Fresenius Group has also had claims asserted against it and has had lawsuits filed against it relating to alleged patent infringements or businesses that it has acquired or divested. These claims and suits relate both to operation of the businesses and to the acquisition and divestiture transactions. The Fresenius Group has, when appropriate, asserted its own claims, and claims for indemnification. A successful claim against the Fresenius Group or any of its subsidiaries could have a material adverse effect upon its business, financial condition, and the results of its operations. Any claims, regardless of their merit or eventual outcome, could have a material adverse effect on the Fresenius Group's reputation and business.

31. LEASES

The Fresenius Group leases land, buildings and improvements, machinery and equipment, as well as IT- and office equipment under various lease agreements.

LEASES IN THE CONSOLIDATED STATEMENT OF INCOME

The following table shows the effects from lease agreements on the consolidated statements of income for 2022 and 2021:

€ in millions	2022	2021
Depreciation on right-of-use assets	950	878
Impairments on right-of-use assets	33	18
Expenses relating to short-term leases	82	64
Expenses relating to leases of low-value assets	43	46
Expenses relating to variable lease payments	29	22
Losses/gains arising from sale and leaseback transactions	-32	–
Other expenses/income from lease agreements	-18	-6
Interest expenses on lease liabilities	202	188

LEASES IN THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

At December 31, the acquisition costs and the accumulated depreciation of right-of-use assets consisted of the following:

ACQUISITION COSTS

€ in millions	As of January 1, 2022	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	As of December 31, 2022
Right-of-use assets: Land	128	1	–	10	0	4	135
Right-of-use assets: Buildings and improvements	7,829	273	-9	706	-1	128	8,670
Right-of-use assets: Machinery and equipment	603	22	2	86	-44	103	566
Right-of-use assets: Advanced Payments	–	–	–	–	–	–	–
Right-of-use assets	**8,560**	**296**	**-7**	**802**	**-45**	**235**	**9,371**

In the fiscal year 2022, reclassifications were mainly made to property, plant and equipment as the Fresenius Group purchased previously leased buildings and equipment from the landlords.

DEPRECIATION

€ in millions	As of January 1, 2022	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2022**
Right-of-use assets: Land	25	0	–	9	0	2	32
Right-of-use assets: Buildings and improvements	2,162	74	-8	863	9	66	3,034
Right-of-use assets: Machinery and equipment	359	14	-1	111	-3	97	383
Right-of-use assets: Advanced Payments	–	–	–	–	–	–	–
Right-of-use assets	**2,546**	**88**	**-9**	**983**	**6**	**165**	**3,449**

ACQUISITION COSTS

€ in millions	As of January 1, 2021	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2021**
Right-of-use assets: Land	121	1	0	13	0	7	128
Right-of-use assets: Buildings and improvements	6,663	373	117	807	-7	124	7,829
Right-of-use assets: Machinery and equipment	579	28	1	95	-53	47	603
Right-of-use assets: Advanced Payments	–	–	–	–	–	–	–
Right-of-use assets	**7,363**	**402**	**118**	**915**	**-60**	**178**	**8,560**

In the fiscal year 2021, reclassifications were mainly made to property, plant and equipment as the Fresenius Group purchased previously leased buildings and equipment from the landlords.

DEPRECIATION

€ in millions	As of January 1, 2021	Foreign currency translation	Changes in consolidation	Additions	Reclassifications	Disposals	**As of December 31, 2021**
Right-of-use assets: Land	18	0	0	9	0	2	25
Right-of-use assets: Buildings and improvements	1,376	100	-2	762	-6	68	2,162
Right-of-use assets: Machinery and equipment	278	15	0	125	-19	40	359
Right-of-use assets: Advanced Payments	–	–	–	–	–	–	–
Right-of-use assets	**1,672**	**115**	**-2**	**896**	**-25**	**110**	**2,546**

CARRYING AMOUNTS

€ in millions	**December 31, 2022**	December 31, 2021
Right-of-use assets: Land	103	103
Right-of-use assets: Buildings and improvements	5,636	5,667
Right-of-use assets: Machinery and equipment	183	244
Right-of-use assets: Advanced Payments	–	–
Right-of-use assets	**5,922**	**6,014**

Depreciation expense and impairments on right-of-use assets amounted to €983 million for the year ended December 31, 2022 (2021: €896 million). These expenses are allocated within costs of revenue, selling, general and administrative and research and development expenses depending upon the area in which the asset is used. In 2022, depreciation expense and impairments on right-of-use assets included impairment losses of €33 million (2021: €18 million).

As of December 31, 2022, lease liabilities comprised a current portion of €851 million (2021: €832 million) and a non-current portion of €5,741 million (2021: €5,758 million). In 2022, approximately 70% of the lease liabilities related to Fresenius Medical Care, approximately 18% to Fresenius Helios, approximately 7% to Fresenius Vamed and approximately 5% to Fresenius Kabi.

LEASES IN THE CONSOLIDATED STATEMENT OF CASH FLOWS

Total cash outflows from leases were €1,315 million for the year ended December 31, 2022 (2021: €1,194 million).

In the consolidated statement of cash flows, the interest component of recognized leases is shown in net cash provided by/used in operating activities, the amortization component is shown in net cash provided by/used in financing activities.

The following potential future cash outflows were not reflected in the measurement of the lease liabilities:

€ in millions	**2022**	2021
Potential cash outflows from:		
extension options	8,013	7,646
purchase options	284	260
leases that the Fresenius Group entered into as a lessee that have not yet begun	165	202
residual value guarantees	136	101
variable lease payments	62	64
penalty payments from the exercise of termination options	11	11

Potential future cash outflows resulting from the exercise of options were not reflected in the measurement of the lease liabilities if the exercise of the respective option was not considered reasonably certain.

The major part of the potential future cash outflows resulting from extension options relates to extension options in real estate lease agreements, primarily for dialysis clinics of Fresenius Medical Care in North America. Individual lease agreements include multiple extension options. The Fresenius Group uses extension options to obtain a high degree of flexibility in performing its business. These extension options held are exercisable solely by the Fresenius Group.

32. FINANCIAL INSTRUMENTS

VALUATION OF FINANCIAL INSTRUMENTS

Carrying amounts of financial instruments

As of December 31, the carrying amounts of financial instruments by item of the statement of financial position and structured according to categories were as follows:

	December 31, 2022						
					Relating to no category		
€ in millions	Carrying amount	Amortized cost	Fair value through profit and loss[1]	Fair value through other comprehensive income[2]	Derivatives designated as cash flow hedging instruments at fair value	Put option liabilities measured at fair value	Valuation according to IFRS 16 for leasing receivables and liabilities
Financial assets							
Cash and cash equivalents	2,749	2,398	351				
Trade accounts and other receivables, less allowances for expected credit losses	7,008	6,648	268	3			89
Accounts receivable from and loans to related parties	157	157					
Other financial assets[3]	2,759	1,903	279	427	21		129
Financial assets	**12,673**	**11,106**	**898**	**430**	**21**	**–**	**218**
Financial liabilities							
Trade accounts payable	2,070	2,070					
Short-term accounts payable to related parties	94	94					
Short-term debt	856	856					
Short-term debt from related parties	11	11					
Long-term debt	2,835	2,835					
Lease liabilities	6,592						6,592
Bonds	16,978	16,978					
Convertible bonds	491	491					
Other financial liabilities[4]	5,400	2,732	652		11	2,005	
Financial liabilities	**35,327**	**26,067**	**652**	**–**	**11**	**2,005**	**6,592**

[1] All included financial assets and liabilities are mandatorily measured at fair value through profit and loss according to IFRS 9.
[2] The option to measure equity instruments at fair value through other comprehensive income has been exercised. The option has been used for €88 million other investments (included in other financial assets).
[3] Other financial assets are included in the item other current and non-current assets in the consolidated statement of financial position.
[4] Other financial liabilities are included in the items short-term provisions and other short-term liabilities and long-term provisions and other long-term liabilities in the consolidated statement of financial position.

In the fiscal year 2022, no reclassifications between the categories occurred.

	December 31, 2021						
					Relating to no category		
€ in millions	Carrying amount	Amortized cost	Fair value through profit and loss[1]	Fair value through other comprehensive income[2]	Derivatives designated as cash flow hedging instruments at fair value	Put option liabilities measured at fair value	Valuation according to IFRS 16 for leasing receivables and liabilities
Financial assets							
Cash and cash equivalents	2,764	1,936	828				
Trade accounts and other receivables, less allowances for expected credit losses	7,045	6,822	108	34			81
Accounts receivable from and loans to related parties	147	147					
Other financial assets[3]	2,560	1,667	342	412	8		131
Financial assets	**12,516**	**10,572**	**1,278**	**446**	**8**	**–**	**212**
Financial liabilities							
Trade accounts payable	2,039	2,039					
Short-term accounts payable to related parties	92	92					
Short-term debt	2,841	2,841					
Short-term debt from related parties	8	8					
Long-term debt	2,600	2,600					
Lease liabilities	6,590						6,590
Bonds	14,634	14,634					
Convertible bonds	482	482					
Other financial liabilities[4]	4,026	2,407	557		18	1,044	
Financial liabilities	**33,312**	**25,103**	**557**	**–**	**18**	**1,044**	**6,590**

[1] All included financial assets and liabilities are mandatorily measured at fair value through profit and loss according to IFRS 9.
[2] The option to measure equity instruments at fair value through other comprehensive income has been exercised. The option has been used for €85 million (included in other financial assets).
[3] Other financial assets are included in the item other current and non-current assets in the consolidated statement of financial position.
[4] Other financial liabilities are included in the items short-term provisions and other short-term liabilities and long-term provisions and other long-term liabilities in the consolidated statement of financial position.

In the fiscal year 2021, reclassifications between the categories were immaterial.

Fair value of financial instruments

The following table shows the carrying amounts and the fair value hierarchy levels as of December 31:

	December 31, 2022				December 31, 2021			
		Fair value				Fair value		
€ in millions	Carrying amount	Level 1	Level 2	Level 3	Carrying amount	Level 1	Level 2	Level 3
Financial assets								
Cash and cash equivalents[1]	351	351			828	828		
Trade accounts and other receivables, less allowances for expected credit losses[1]	271		271		142		142	
Other financial assets[1]								
Debt instruments	445	445			422	418	4	
Equity investments	224	36	103	85	320	122	105	93
Derivatives designated as cash flow hedging instruments	21		21		8		8	
Derivatives not designated as hedging instruments	37		37		12		12	
Other financial assets								
Financial liabilities								
Long-term debt	2,835		2,770		2,600		2,626	
Bonds	16,978	14,872			14,634	15,201		
Convertible bonds	491	481			482	499		
Other financial liabilities[1]								
Put option liabilities	2,005			2,005	1,044			1,044
Accrued contingent payments outstanding for acquisitions	633			633	528			528
Derivatives designated as cash flow hedging instruments	11		11		18		18	
Derivatives not designated as hedging instruments	19		19		29		29	

[1] Fair value information is not provided for financial instruments, if the carrying amount is a reasonable estimate of the fair value due to the relatively short period of maturity of these instruments.

The increase of put option liabilities relates to the acquisition of mAbxience and InterWell Health. These put option liabilities are classified as level 3.

The significant methods and assumptions used to estimate the fair values of financial instruments as well as classification of fair value measurements according to the three-tier fair value hierarchy are as follows:

Cash and cash equivalents include short-term financial investments that are measured at fair value through profit and loss. The fair value of these assets, which are quoted in an active market, is based on price quotations at the date of the consolidated financial statements (Level 1).

Trade accounts receivable from factoring contracts are measured on the basis of observable market information (Level 2).

The majority of debt instruments included in other financial assets are bonds that are quoted in an active market and therefore measured at fair value (Level 1) which is based on price quotations at the date of the consolidated financial statements. Further debt instruments give rise to cash flows on specified dates (Level 2).

Equity investments are not held for trading. At initial recognition, the Fresenius Group elected, on an instrument-by-instrument basis, to represent subsequent changes in the fair value of individual strategic investments in other comprehensive income (loss). All equity investments for which changes in fair value are recorded in other comprehensive income (loss) relate to purchases of publicly traded shares or percentage ownership of companies in the health sciences or adjacent fields and are made up of individually non-significant investments. At December 31, 2022, the Fresenius Group held 70 non-listed equity investments (December 31, 2021: 70) with a fair value of €88 million (December 31, 2021: €85 million). At December 31, 2022, and at December 31, 2021, the Fresenius Group held no listed equity investments.

During 2022, gains of €67 million were transferred from other comprehensive income to retained earnings, primarily due to the disposal of an investment measured at fair value through other comprehensive income and the subsequent transfer of the related net gain to retained earnings by Vifor Fresenius Medical Renal Pharma Ltd. (Fresenius Medical Care's equity method investee) as well as a disposal of an investment. Of this amount, €22 million was attributable to the shareholders of Fresenius SE & Co. KGaA. In 2022, the Fresenius Group recognized dividends of €4 million from these equity investments.

During 2021, gains of €34 million were transferred from other comprehensive income (loss) to retained earnings as two investments were disposed of. Of this amount, €11 million was attributable to the shareholders of Fresenius SE & Co. KGaA. In 2021, the Fresenius Group recognized dividends of €2 million from these equity investments.

The fair values of equity investments are based on observable market information (Level 2). From time to time the Fresenius Group engages external valuation firms to determine the fair value of Level 3 equity investments. The external valuation uses a discounted cash flow model, which includes significant unobservable inputs such as investment specific forecasted financial statements, weighted average cost of capital, that reflects current market assessments as well as a terminal growth rate. The fair values of other equity investments that are traded in an active market, are based on price quotations at the date of the consolidated financial statements (Level 1).

The fair values of major long-term financial instruments are calculated on the basis of market information. Liabilities for which market quotes are available are measured with the market quotes at the reporting date (Level 1). The fair values of the other long-term financial liabilities are calculated at the present value of respective future cash flows. To determine these present values, the prevailing interest rates and credit spreads for the Fresenius Group as of the date of the statement of financial position are used (Level 2).

The valuation of the put option liabilities is determined using significant unobservable inputs (Level 3). The method for calculating the fair value is described in note 1.III.q, Financial instruments. For the purpose of analyzing the impact of changes in unobservable inputs on the fair value measurement of put option liabilities, the Fresenius Group assumes an increase on earnings (or enterprise value for the put options granted in the InterWell Health business combination) of 10% compared to the actual estimation as of the balance sheet date. The corresponding increase in fair value of €150 million is then compared to the total liabilities and the shareholder's equity of the Fresenius Group. This analysis shows that an increase of 10% in the relevant earnings (or enterprise value for the put options granted in the InterWell Health business combination) would have an effect of less than 1% on the total liabilities and on the shareholder's equity of the Fresenius Group. At December 31, 2022, 73% of the put option liabilities related to Fresenius Medical Care (December 31, 2021: 95%) and 23% to Fresenius Kabi (December 31, 2021: 0%).

Contingent payments outstanding for acquisitions are recognized at their fair value. The estimation of the individual fair values is based on the key inputs of the arrangement that determine the future contingent payment as well as the Fresenius Group's expectation of these factors (Level 3). The Fresenius Group assesses the likelihood and timing of achieving the relevant objectives. The underlying assumptions are reviewed regularly.

The following table shows the changes of the fair values of financial instruments classified as Level 3 in the fiscal years 2022 and 2021:

€ in millions	Equity investments	Accrued contingent payments outstanding for acquisitions	Put option liabilities
As of January 1, 2021	**219**	**581**	**901**
Transfer to Level 1	-159	–	–
Additions	21	25	146
Disposals	–	-27	-19
Gain/loss recognized in profit or loss	-1	-52	0
Gain/loss recognized in equity	–	0	-57
Currency effects and other changes	13	1	73
As of December 31, 2021	**93**	**528**	**1,044**
Additions	3	162	1,112
Disposals	–	-54	-7
Gain/loss recognized in profit or loss	-14	-4	1
Gain/loss recognized in equity	–	–	-175
Currency effects and other changes	3	1	30
As of December 31, 2022	**85**	**633**	**2,005**

At September 30, 2021, Fresenius Medical Care transferred its investment in Humacyte, Inc. (Humacyte) with a carrying amount of €159 million from Level 3 to Level 1, after Humacyte completed its merger with Alpha Healthcare Acquisition Corporation, a special purpose acquisition company. The shares in Alpha Healthcare Acquisition Corporation (now called Humacyte) received by Fresenius Medical Care as a result of this merger and in a contemporaneous private placement are quoted in an active market, and Humacyte has registered shares held by Fresenius Medical Care for resale under the Securities Act of 1933.

Derivatives, mainly consisting of foreign exchange forward contracts, are valued as follows: To determine the fair value of foreign exchange forward contracts, the contracted forward rate is compared to the current forward rate for the remaining term of the contract as of the date of the statement of financial position. The result is then discounted on the basis of the market interest rates prevailing at the date of the statement of financial position for the respective currency.

Fresenius Group's own credit risk is incorporated in the fair value estimation of derivatives that are liabilities. Counterparty credit risk adjustments are factored into the valuation of derivatives that are assets. The Fresenius Group monitors and analyzes the credit risk from derivative financial instruments on a regular basis. For the valuation of derivative financial instruments, the credit risk is considered in the fair value of every individual instrument. The basis for the default probability are Credit Default Swap Spreads of each counterparty appropriate for the duration. The calculation of the credit risk considered in the valuation is done by multiplying the default probability appropriate for the duration with the expected discounted cash flows of the derivative financial instrument.

Derivatives not designated as hedging instruments comprise derivatives embedded in convertible bonds and call options which have been purchased to hedge the convertible bonds. The fair value of the embedded derivatives is calculated using the difference between the market value of the particular convertible bonds and the market value of an adequate straight bond discounted with the market interest rates as of the reporting date. The fair value of the call options is calculated from price quotations.

For the calculation of the fair value of derivative financial instruments, the Fresenius Group uses market quoted input parameters. Therefore, these are classified as Level 2 in accordance with the defined fair value hierarchy levels.

Derivative financial instruments are marked to market each reporting period, resulting in carrying amounts equal to fair values at the reporting date.

Transfers of financial assets

In 2022, the Fresenius Group has entered into two factoring agreements for the sale of receivables from the provision of health care services with a volume of €440 million.

The assessment of the risks arising from the receivables sold is based on the credit risk (default risk) and the risk of late payment (late payment risk). The credit risk is transferred in full to the buyers. The late payment risk remains fully with the Fresenius Group. Substantially all of the risks and rewards associated with the receivables sold have neither been transferred nor retained (allocation of significant risks and rewards between the Fresenius Group and the buyers).

The Fresenius Group continues to account for the receivables transferred at the amount of its continuing involvement, i.e. the maximum amount for which it remains liable for the late payment risk inherent in the receivables sold, and recognizes a corresponding associated liability reported as liabilities to credit institutions. The carrying amount of the continuing involvement from the receivables sold as of the reporting date (€440 million) is €16 million. The carrying amount of the associated liability is €29 million and the fair value of the associated liability expensed is €13 million. The Fresenius Group continues to perform collection (servicing) for the transferred receivables without being remunerated for this service. Since existing structures within the Fresenius Group are used for this service and the expense attributable to the program is immaterial, no separate servicing liability was recognized.

In addition, the Fresenius Group has other programs for the sale of trade accounts receivable and receivables from the provision of health care services under which substantially all risks and rewards are transferred to the buyers of the receivables.

FAIR VALUES OF DERIVATIVE FINANCIAL INSTRUMENTS

	December 31, 2022		December 31, 2021	
€ in millions	**Assets**	**Liabilities**	Assets	Liabilities
Foreign exchange contracts (current)	20	11	8	18
Foreign exchange contracts (non-current)	1	–	0	0
Derivatives in cash flow hedging relationships	**21**	**11**	**8**	**18**
Interest rate contracts (current)	–	–	–	0
Foreign exchange contracts (current)	20	18	10	29
Foreign exchange contracts (non-current)	17	1	2	0
Derivatives embedded in the convertible bonds	–	0	–	0
Call options to secure the convertible bonds	0	–	0	–
Derivatives not designated as hedging instruments	**37**	**19**	**12**	**29**

Derivatives not designated as hedging instruments, which are derivatives that do not qualify for hedge accounting, are also solely entered into to hedge economic business transactions and not for speculative purposes.

The current portion of derivatives indicated as assets in the preceding table is recognized within other current assets in the consolidated statement of financial position, while the current portion of those indicated as liabilities is included in short-term provisions and other short-term liabilities. The non-current portions indicated as assets or liabilities are recognized in other non-current assets or in long-term provisions and other long-term liabilities, respectively. The derivatives embedded in the convertible bonds and the call options to secure the convertible bonds are recognized in other current and non-current liabilities / assets in the consolidated statement of financial position.

To reduce the credit risk arising from derivatives, the Fresenius Group concluded master netting agreements with banks. Through such agreements, positive and negative fair values of the derivative contracts could be offset against one another if a partner becomes insolvent. This offsetting is valid for transactions where the aggregate amount of obligations owed to and receivable from are not equal. If insolvency occurs, the party which owes the larger amount is obliged to pay the other party the difference between the amounts owed in the form of one net payment.

These master netting agreements do not provide a basis for offsetting the fair values of derivative financial instruments in the consolidated statement of financial position as the offsetting criteria under International Financial Reporting Standards are not satisfied.

At December 31, 2022 and December 31, 2021, the Fresenius Group had €50 million and €18 million of derivative financial assets subject to netting arrangements and €28 million and €41 million of derivative financial liabilities subject to netting arrangements. Offsetting these derivative financial instruments would have resulted in net assets of €37 million and €12 million as well as net liabilities of €15 million and €35 million at December 31, 2022 and December 31, 2021, respectively.

Effects of financial instruments recorded in the consolidated statement of income

In 2022, the net gains and losses from financial instruments consisted of allowances for expected credit losses (including recoveries) in an amount of €65 million (2021: €71 million) and expenses from foreign currency transactions of €85 million (2021: €25 million). In 2022, interest income of €187 million resulted mainly from income in connection with receivables from royalties, from lease receivables and overdue receivables, from interest income related to the release of interest accruals on tax positions, as well as from discounting effects and accrued contingent payments outstanding for acquisitions. In 2021, interest income of €124 million resulted mainly from trade accounts and other receivables recognized at amortized cost and from interest income related to the release of interest accruals on tax positions. Interest expense of €694 million (2021: €630 million) resulted mainly from Fresenius Group's financial liabilities, which are recognized at amortized cost. Moreover, €202 million (2021: €188 million) related to lease liabilities.

During 2022, the Fresenius Group recognized net losses of €91 million (2021 €56 million) from changes in the fair value of equity investments and debt instruments that are measured at fair value through profit and loss within other operating income and expenses and net interest.

Income of €4 million (2021: €52 million) resulted from the valuation of contingent payments outstanding. Income and expense from financial instruments recorded in other comprehensive income (loss) related to derivatives in cash flow hedging relationships and to equity investments and debt instruments measured at fair value through other comprehensive income.

The changes of cash flow hedges on the consolidated statement of comprehensive income (loss) before tax for the years 2022 and 2021 are as follows:

EFFECT OF DERIVATIVES ON THE CUMULATED OTHER COMPREHENSIVE INCOME (LOSS)

	2022				
	Cash Flow Hedge Reserve		Costs of Hedging Reserve		
€ in millions	Changes of the unrealized gains/losses in other comprehensive income (loss)	Reclassifications from other comprehensive income (loss)[1]	Changes of the unrealized gains/losses in other comprehensive income (loss)	Reclassifications from other comprehensive income (loss)[1]	Affected line item in the consolidated statement of income/consolidated statement of financial position
Interest rate contracts	–	2	n.a.	n.a.	Interest income/expense
Foreign exchange contracts	20	4	-2	-1	
thereof		3		0	Revenue
		-2		2	Costs of revenue
		0		0	General and administrative expenses
		4		2	Other operating income/expenses
		–		-5	Interest income/expense
		-1		0	Inventories
Derivatives in cash flow hedging relationships	**20**	**6**	**-2**	**-1**	

	2021				
	Cash Flow Hedge Reserve		Costs of Hedging Reserve		
€ in millions	Changes of the unrealized gains/losses in other comprehensive income (loss)	Reclassifications from other comprehensive income (loss)[1]	Changes of the unrealized gains/losses in other comprehensive income (loss)	Reclassifications from other comprehensive income (loss)[1]	Affected line item in the consolidated statement of income/consolidated statement of financial position
Interest rate contracts	-	2	n.a.	n.a.	Interest income/expense
Foreign exchange contracts	-21	13	-1	1	
thereof		1		1	Revenue
		-1		-1	Costs of revenue
		0		–	General and administrative expenses
		12		3	Other operating income/expenses
		–		-2	Interest income/expense
		1		0	Inventories
Derivatives in cash flow hedging relationships	**-21**	**15**	**-1**	**1**	

[1] In the consolidated statement of income, no gains or losses from ineffectiveness and only immaterial gains/losses from a hedged underlying transaction, that is no longer expected to occur, are recognized. Gains are shown with a negative sign and losses with a positive sign.

The Fresenius Group solely designates the spot element of the foreign exchange forward contracts as hedging instrument in cash flow hedges. Changes of the fair value of derivative financial instruments that are designated as cash flow hedges are recorded within other comprehensive income (loss).

The effective portion of changes in fair value of the spot element of the hedging instruments is accumulated in a cash flow hedge reserve within other comprehensive income (loss). The forward points of the foreign exchange forward contract is accounted for as cost of hedging reserve within other comprehensive income (loss).

For all cash flow hedges, except for foreign currency risk associated with forecasted purchases of non-financial assets, the amounts accumulated in the cash flow hedge reserve are reclassified to profit or loss as a reclassification adjustment in the same period as the hedged forecasted cash flows affect profit or loss. For cash flow hedges of foreign currency risk associated with forecasted purchases of non-financial assets, the amounts accumulated in the cash flow hedge reserve are instead included directly in the initial cost of the asset when it is recognized. The same approach applies to the amounts accumulated in the costs of hedging reserve.

EFFECT OF DERIVATIVES ON THE CONSOLIDATED STATEMENT OF INCOME

	Gain or loss recognized in the consolidated statement of income		
€ in millions	**2022**	2021	Affected line item in the consolidated statement of income
Interest rate contracts	0	0	Interest income/expense
Foreign exchange contracts	-28	87	Other operating income/expense
Foreign exchange contracts	2	5	Interest income/expense
Derivatives embedded in the convertible bonds	0	0	Interest income/expense
Call options to secure the convertible bonds	0	0	Interest income/expense
Derivatives not designated as hedging instruments	**-26**	**92**	

In 2022, losses (2021: gains) from foreign exchange contracts not designated as hedging instruments recognized in the consolidated statement of income are faced by gains (2021: losses) from the underlying transactions in the corresponding amount.

MARKET RISK

The Fresenius Group is exposed to effects related to foreign exchange fluctuations in connection with its international business activities that are denominated in various currencies. In order to finance its business operations, the Fresenius Group issues bonds and commercial papers and enters into long-term credit agreements and Schuldschein Loans with banks. Due to these financing activities, the Fresenius Group is exposed to interest risk caused by changes in variable interest rates and the risk of changes in the fair value of statement of financial position items bearing fixed interest rates.

In order to manage the risk of interest rate and foreign exchange rate fluctuations, the Fresenius Group enters into certain hedging transactions with financial institutions within the limits approved by the Management Board, which are set depending on the counterparty's rating. The counterparties generally have an investment grade rating. Derivative financial instruments are not entered into for trading purposes.

The Fresenius Group makes sure that hedge accounting relationships are aligned with its Group risk management objectives and strategy and that a qualitative and forward-looking approach is used for assessing hedge effectiveness.

In general, the Fresenius Group conducts its derivative financial instrument activities under the control of a single centralized department. The Fresenius Group has established guidelines derived from best practice standards in the banking industry for risk assessment procedures and supervision concerning the use of financial derivatives. These guidelines require amongst other things a clear segregation of duties in the areas of execution, administration, accounting and controlling. Risk limits are continuously monitored and, where appropriate, the use of hedging instruments is adjusted to that extent.

The Fresenius Group defines benchmarks for individual exposures in order to quantify interest and foreign exchange risks. The benchmarks are derived from achievable and sustainable market rates. Depending on the individual benchmarks, hedging strategies are determined and implemented. The Fresenius Group makes sure there is an economic relationship between the hedged item and the hedging instrument and ensures reasonable hedge ratios of the designated hedged items with interest and currency risks. This is achieved by matching to a large extent the critical terms of the interest and foreign exchange derivatives with the critical terms of the underlying exposures. Therefore, the earnings of the Fresenius Group were not materially affected by hedge ineffectiveness in the reporting period. In principle, sources of inefficiency are risk of credit default and time lags of underlying exposures.

Foreign exchange risk management

The Fresenius Group has determined the euro as its financial reporting currency. Therefore, foreign exchange translation risks resulting from the fluctuation of exchange rates between the euro and the local currencies, in which the financial statements of the foreign subsidiaries are prepared, have an impact on results of operations and financial positions reported in the consolidated financial statements.

Besides translation risks, foreign exchange transaction risks exist. These mainly relate to transactions denominated in foreign currencies, such as purchases and sales, projects and services as well as intragroup sales of products to other Fresenius Group entities in different currency areas. Therefore, the subsidiaries are affected by changes of foreign exchange rates between the invoicing currencies and the local currencies in which they conduct their businesses. Solely for the purpose of hedging existing and foreseeable foreign exchange transaction exposures, the Fresenius Group applies appropriate financial instruments. For loans in foreign currencies, the Fresenius Group enters into foreign exchange swap contracts. The Fresenius Group solely designates the spot element of the foreign exchange forward contract as hedging instrument in cash flow hedges and uses a hedge ratio for designated risks of 1 : 1. The fair value of foreign exchange contracts designated as cash flow hedges used to hedge operating transaction risks was €18 million (December 31, 2021: -€13 million) and in relation with loans in foreign currencies -€7 million (December 31, 2021: €3 million).

As of December 31, 2022, the notional amounts of foreign exchange contracts totaled €4,420 million (December 31, 2021: €2,917 million). Thereof €4,120 million (December 31, 2021: €2,671 million) were due in less than 12 months. As of December 31, 2022, the Fresenius Group was party to foreign exchange contracts with a maximum remaining term to maturity of 48 months. The Fresenius Group uses a Cash-Flow-at-Risk (CFaR) model in order to estimate and quantify such transaction risks from foreign currencies. The basis for the analysis of the currency risks are the foreign currency cash flows that are reasonably expected to arise within the following 12 months, less any hedges. Under the CFaR approach, the potential currency fluctuations of these net exposures are shown as probability distributions based on historical volatilities and correlations, using the values of the last 50 exchange rates with an interval of 21 trading days. The calculation is made assuming a confidence level of 95% and a holding period of up to one year.

The aggregation of currency risks has risk-mitigating effects due to correlations between the transactions concerned, i. e. the overall portfolio's risk exposure is generally less than the sum total of the underlying individual risks. As of December 31, 2022, the Fresenius Group's cash flow at risk amounted to €52 million based on a net exposure of €1,805 million. This means, with a probability of 95%, a potential loss in relation to the forecasted foreign exchange cash flows of the next 12 months will be not higher than €52 million.

The following table shows the average hedging rates and nominal amounts of foreign exchange contracts for material currency pairs at December 31, 2022.

	Nominal amount in € millions	Average hedging rate
Euro/U.S. dollar	1,768	1.0647
Euro/Swedish krona	555	10.7241
Euro/Chinese renminbi	477	7.1411

Interest rate risk management

Fresenius Group's interest rate risks mainly arise from money market and capital market transactions of the Group for financing its business activities.

The Fresenius Group applies appropriate financial instruments in order to protect against the risk of rising interest rates. These interest rate derivatives are exclusively designated as cash flow hedges and have been entered into in order to convert payments based on variable interest rates into payments at a fixed interest rate and in anticipation of future long-term debt issuances (pre-hedges). As of December 31, 2021, the euro denominated interest rate swap had a notional volume of €482 thousand. The fair value was -€12 thousand. The euro interest rate swap expired in 2022. It bore an interest rate of 3.39%.

The pre-hedges are used to hedge interest rate exposures with regard to interest rates which are relevant for the future long-term debt issuance and which could rise until the respective debt is actually issued. These pre-hedges are settled at the issuance date of the corresponding long-term debt with the settlement amount recorded in accumulated other comprehensive income (loss) amortized to interest expense over the life of the debt. At December 31, 2022 and December 31, 2021, the Fresenius Group had a loss of €7 million and €8 million, respectively, related to such settlements of pre-hedges deferred in accumulated other comprehensive income (loss), net of tax.

Interest payables and interest receivables in connection with the swap agreements are accrued and recorded as an adjustment to the interest expense at each reporting date. Concerning interest rate contracts, unscheduled repayments or the renegotiation of hedged items may in some cases lead to the de-designation of the hedging instrument, which existed up to that point. From that date, the respective hedging transactions are recognized in the consolidated statement of income.

For purposes of analyzing the impact of changes in the relevant reference interest rates on Fresenius Group's results of operations, the Group calculates the portion of financial debt which bears variable interest rates and which has not been hedged by means of interest rate swaps or options against rising interest rates. For this particular part of its liabilities, the Fresenius Group assumes an increase in the reference rates of 0.5% compared to the actual rates as of the date of the statement of financial position. The corresponding additional annual interest expense is then compared to the net income attributable to shareholders of Fresenius SE & Co. KGaA. This analysis shows that an increase of 0.5% in the relevant reference rates would have an effect of approximately 0.6% on the consolidated net income attributable to shareholders of Fresenius SE & Co. KGaA and an effect of less than 0.1% on Fresenius SE & Co. KGaA shareholders' equity.

Management of the Interest Rate Benchmark Reform (IBOR-Reform)

A fundamental reform of major interest rate benchmarks has been undertaken globally. This included the replacement of certain interbank offered rates (IBORs) with alternative nearly risk-free rates (referred to as IBOR reform). The Fresenius Group had exposures to relevant IBORs through its financial instruments, which were affected as part of this market-wide initiative.

Due to the possibility of multicurrency drawings, the Syndicated Credit Facilities of Fresenius SE & Co. KGaA and Fresenius Medical Care AG & Co. KGaA, both in the amount of €2 billion, had allowed for U.S. dollar LIBOR-based drawings in addition to euro drawings. The U.S. dollar LIBOR was replaced with the Term Secured Overnight Financing Rate (Term SOFR).

CREDIT RISK

The Fresenius Group is exposed to potential losses regarding financial instruments in the event of non-performance by counterparties. With respect to derivative financial instruments, it is not expected that any counterparty will fail to meet its obligations as the counterparties are highly rated financial institutions (generally investment grade). The maximum credit exposure of derivatives is represented by the fair value of those contracts with a positive fair value amounting to €58 million (December 31, 2021: €20 million) for foreign exchange derivatives. At December 31, 2021, the Fresenius Group's interest rate derivative did not bear a credit risk. The maximum credit risk resulting from the use of non-derivative financial instruments is defined as the total amount of all receivables. In order to control this credit risk, the Management of the Fresenius Group performs an aging analysis of trade accounts receivable. For details on trade accounts receivable and on the allowances for expected credit losses, please see note 16, Trade accounts and other receivables.

LIQUIDITY RISK

The liquidity risk is defined as the risk that a company is potentially unable to meet its financial obligations. The Management of the Fresenius Group manages the liquidity of the Group by means of effective working capital and cash management as well as an anticipatory evaluation of refinancing alternatives. The Management of the Fresenius Group believes that existing credit facilities as well as the cash generated by operating activities and additional short-term and long-term borrowings are sufficient to meet the company's foreseeable demand for liquidity (see note 23, Debt).

The following table shows the future undiscounted contractual cash flows (including interests) resulting from recognized financial liabilities and derivative financial instruments:

	2022				2021			
€ in millions	**up to 1 year**	**1 to 3 years**	**3 to 5 years**	**more than 5 years**	up to 1 year	1 to 3 years	3 to 5 years	more than 5 years
Non-derivative financial instruments								
Long-term debt (including Accounts Receivable Facility)[1]	731	1,018	995	520	517	1,457	325	408
Short-term debt	877	–	–	–	2,853	–	–	–
Lease liabilities	1,045	1,866	1,487	3,449	1,008	1,834	1,399	3,580
Bonds	997	4,411	5,587	8,118	886	2,889	4,216	8,501
Convertible bonds	–	500	–	–	–	500	–	–
Trade accounts payable	2,070	–	–	–	2,039	–	–	–
Other financial liabilities	2,838	4	1	0	2,502	3	1	1
Contingent payments outstanding for acquisitions	254	114	111	216	41	256	83	160
Put option liabilities	688	710	598	68	683	231	171	90
Total non-derivative financial instruments	**9,500**	**8,623**	**8,779**	**12,371**	**10,529**	**7,170**	**6,195**	**12,740**
Derivative financial instruments								
Derivatives designated as cash flow hedging instruments								
Inflow	-497	–	–	–	-667	-2	–	–
Outflow	507	–	–	–	688	3	–	–
Net derivatives designated as cash flow hedging instruments	**10**	**–**	**–**	**–**	**21**	**1**	**–**	**–**
Derivatives not designated as hedging instruments								
Inflow	-1,398	-37	–	–	-1,039	-1	–	–
Outflow	1,419	35	–	–	1,074	1	–	–
Net derivatives not designated as hedging instruments	**21**	**-2**	**–**	**–**	**35**	**0**	**–**	**–**
Total derivative financial instruments	**31**	**-2**	**–**	**–**	**56**	**1**	**–**	**–**
Total non-derivative and derivative financial instruments	**9,531**	**8,621**	**8,779**	**12,371**	**10,585**	**7,171**	**6,195**	**12,740**

[1] Future interest payments for financial liabilities with variable interest rates were calculated using the latest interest rates fixed prior to December 31, 2022.

33. INFORMATION ON CAPITAL MANAGEMENT

The Fresenius Group has a solid financial profile. Capital management includes both equity and debt. Principal objectives of Fresenius Group's capital management are to ensure financial flexibility, to limit refinancing risks and to optimize the weighted average cost of capital. Further, it is sought to achieve a balanced mix of equity and debt.

Due to the company's diversification within the health care sector and the strong market positions of the business segments in global, growing and non-cyclical markets, predictable and sustainable cash flows are generated. They allow a reasonable proportion of debt. Moreover, Fresenius Group's customers are generally of high credit quality.

Measures to strengthen the equity base may also be considered in exceptional cases to ensure long-term growth.

Shareholders' equity and debt have developed as follows:

SHAREHOLDERS' EQUITY

€ in millions	**December 31, 2022**	December 31, 2021
Shareholders' equity	32,218	29,288
Total assets	76,415	71,962
Equity ratio	42.2%	40.7%

Fresenius SE & Co. KGaA is not subject to any capital requirements provided for in its articles of association. Fresenius SE & Co. KGaA has obligations to issue shares out of the Conditional Capital relating to the exercise of stock options on the basis of the existing 2013 Stock Option Plan (see note 36, Share-based compensation plans).

DEBT

€ in millions	**December 31, 2022**	December 31, 2021
Debt	27,763	27,155
Total assets	76,415	71,962
Debt ratio	36.3%	37.7%

Assuring financial flexibility is the top priority in the Group's financing strategy. This flexibility is achieved through a broad spread of maturities, a wide range of financing instruments, the investment grade credit rating and a high degree of diversification of investors and banks. Fresenius Group's maturity profile displays a broad spread of maturities with a high proportion of medium- and long-term financing. In the choice of financing instruments, market capacity, investor diversification, capital cost, flexibility, credit conditions and the existing maturity profile are taken into account.

The leverage ratio on the basis of net debt/EBITDA is a key financial figure for the Fresenius Group. As of December 31, 2022, the leverage ratio, calculated on the basis of year-end exchange rates, before special items was 3.64 (December 31, 2021: 3.55).

Fresenius Group's financing strategy is reflected in its investment grade credit ratings. The Fresenius Group is covered by the rating agencies Moody's, Standard & Poor's and Fitch.

The following table shows the company rating of Fresenius SE & Co. KGaA:

RATING OF FRESENIUS SE & CO. KGAA

	December 31, 2022	December 31, 2021
Standard & Poor's		
Corporate Credit Rating	BBB	BBB
Outlook	stable	stable
Moody's		
Corporate Credit Rating	Baa3	Baa3
Outlook	stable	stable
Fitch		
Corporate Credit Rating	BBB -	BBB -
Outlook	negative	stable

On November 15, 2022, Fitch confirmed Fresenius Group's BBB- Corporate Credit Rating, the outlook was changed from stable to negative. In 2021, Fresenius Group's rating remained unchanged.

34. SUPPLEMENTARY INFORMATION ON THE CONSOLIDATED STATEMENT OF CASH FLOWS

The consolidated statements of cash flows of the Fresenius Group for the fiscal years 2022 and 2021 are shown on pages 290 and 291.

Cash funds reported in the consolidated statement of cash flows and in the consolidated statement of financial position are comprised of cash on hand, checks, securities and cash at bank which are readily convertible within three months and are subject to insignificant risk of changes in value.

In 2022, Fresenius Helios has used subsidies for investments in property, plant and equipment in the amount of €59 million (2021: €99 million), that were offset in purchases of property, plant and equipment in the consolidated statement of cash flows.

Cash paid for acquisitions consisted of the following:

€ in millions	2022	2021
Assets acquired	2,472	1,057
Liabilities assumed	-257	-35
Noncontrolling interests	-606	-120
Debt assumed	-734	-86
Cash paid	**875**	**816**
Cash acquired	-74	-55
Cash paid for acquisitions, net	**801**	**761**
Cash paid for investments, net of cash acquired	129	206
Cash paid for intangible assets, net	47	32
Total cash paid for acquisitions and investments and purchases of intangible assets	**977**	**999**

In 2022, €106 million (2021: €129 million) of cash paid for investments, net of cash acquired, related to investments in securities in the business segment Fresenius Medical Care.

Proceeds from the sale of subsidiaries were €90 million in 2022 (2021: €54 million.)

The following table shows a reconciliation of debt to cash flow from financing activities in 2022 and 2021:

€ in millions	January 1, 2022	Cash flow	Non-cash changes: Assumed as part of acquisitions	Non-cash changes: Foreign currency translation	Non-cash changes: Amortization of debt issuance costs	Non-cash changes: New lease contracts	Non-cash changes: Other[1]	December 31, 2022
Short-term debt	2,841	-1,957	-1	-2	–	–	-25	856
Long-term debt, less Accounts Receivable Facility of Fresenius Medical Care	2,600	22	21	55	-27	–	164	2,835
Lease liabilities	6,590	-975	2	236	–	802	-63	6,592
Bonds	14,634	2,132	–	195	28	–	-11	16,978
Convertible bonds	482	–	–	–	9	–	–	491

[1] Under the effective interest method, non-cash changes result from the compounding interest on lease liabilities in the amount of €202 million.

€ in millions	January 1, 2021	Cash flow	Non-cash changes: Assumed as part of acquisitions	Foreign currency translation	Amortization of debt issuance costs	New lease contracts	Other[1]	December 31, 2021
Short-term debt	245	2,591	1	1	–	–	3	2,841
Long-term debt, less Accounts Receivable Facility of Fresenius Medical Care	5,154	-2,569	24	62	6	–	-77	2,600
Lease liabilities	6,188	-880	121	319	–	915	-73	6,590
Bonds	13,847	461	–	300	17	–	9	14,634
Convertible bonds	474	–	–	–	8	–	–	482

[1] Under the effective interest method, non-cash changes result from the compounding interest on lease liabilities in the amount of €188 million.

Interest payments are included in the consolidated statement of cash flows under net cash provided by operating activities. In fiscal year 2022, cash payments related to interest amounted to €607 million (2021: €502 million). Accrued interest on debt and bonds is reported in the consolidated statement of financial position under short-term provisions and other short-term liabilities.

35. NOTES ON THE CONSOLIDATED SEGMENT REPORTING

GENERAL

The consolidated segment reporting tables shown on pages 294 to 296 of this Annual Report are an integral part of the notes.

The Fresenius Group has identified the business segments Fresenius Medical Care, Fresenius Kabi, Fresenius Helios and Fresenius Vamed, which corresponds to the internal organizational and reporting structures (Management Approach) at December 31, 2022.

The key data disclosed in conjunction with the consolidated segment reporting correspond to the key data of the internal reporting system of the Fresenius Group. Internal and external reporting and accounting correspond to each other; the same key data and definitions are used.

Sales and proceeds between the segments are indicative of the actual sales and proceeds agreed with third parties. Administrative services are billed in accordance with service level agreements.

The business segments were identified in accordance with IFRS 8, Operating Segments, which defines the segment reporting requirements in the annual financial statements and interim reports with regard to the operating business, product and service businesses and regions.

The business segments of the Fresenius Group are as follows:

- Fresenius Medical Care
- Fresenius Kabi
- Fresenius Helios
- Fresenius Vamed

The column Corporate is comprised of the holding functions of Fresenius SE & Co. KGaA as well as Fresenius Digital Technology GmbH, which provides services in the field of information technology. Furthermore, Corporate includes intersegment consolidation adjustments as well as special items (see note 3, Special items).

Details on the business segments are shown on page 298 of the notes.

Segment reporting by region takes account of geographical factors and the similarity of markets in terms of opportunities and risks. The allocation to a particular region is based on the domicile of the customers.

NOTES ON THE BUSINESS SEGMENTS

The key figures used by the Management Board to assess segment performance, have been selected in such a way that they include all items of income and expenses which fall under the area of responsibility of the business segments. The Management Board is convinced that the most suitable performance indicator is the operating income (EBIT). The Management Board believes that, in addition to the operating income, the figure for earnings before interest, taxes and depreciation / amortization (EBITDA) can also help investors to assess the ability of the Fresenius Group to generate cash flows and to meet its financial obligations.

Depreciation and amortization is presented for property, plant and equipment and intangible assets with definite useful lives of the respective business segment.

Net interest is comprised of interest expenses and interest income.

Net income attributable to shareholders of Fresenius SE & Co. KGaA is defined as earnings after income taxes and noncontrolling interests.

The operating cash flow is the cash provided by/used in operating activities.

The cash flow before acquisitions and dividends is the operating cash flow less net capital expenditure.

Debt is comprised of bank loans, bonds, convertible bonds, lease liabilities, liabilities relating to outstanding acquisitions as well as intercompany liabilities.

Other operating liabilities include the sum of short-term and long-term liabilities, less debt and less liabilities for deferred taxes.

Capital expenditure mainly contains additions to property, plant and equipment, including non-cash effective items.

Acquisitions refer to the purchase of shares in legally independent companies and the acquisition of business divisions and intangible assets (e.g. licenses). The key figures shown with regard to acquisitions present the contractual purchase prices comprising amounts paid in cash (less cash acquired), debts assumed and the issuance of shares, whereas for the purposes of the statement of cash flows, only cash purchase price components less acquired cash and cash equivalents are reported. The business combination of InterWell Health was not included in the acquisitions as it was conducted as a non-cash transaction.

The EBITDA margin is calculated as a ratio of EBITDA to revenue.

The EBIT margin is calculated as a ratio of EBIT to revenue.

The return on operating assets (ROOA) is defined as the ratio of EBIT to average operating assets. Operating assets are defined as total assets less deferred tax assets, trade accounts payable and advance payments from customers as well as guaranteed subsidies.

In addition, the key indicators "Depreciation and amortization in % of revenue" and "Operating cash flow in % of revenue" are also disclosed.

RECONCILIATION OF KEY FIGURES TO CONSOLIDATED EARNINGS

€ in millions	2022	2021
Total EBIT of reporting segments	4,102	4,296
Special items	-683	-94
General corporate expenses Corporate (EBIT)	-98	-44
Group EBIT	**3,321**	**4,158**
Interest expenses	-694	-630
Interest income	187	124
Income before income taxes	**2,814**	**3,652**

RECONCILIATION OF NET DEBT WITH THE CONSOLIDATED STATEMENT OF FINANCIAL POSITION

€ in millions	Dec. 31, 2022	Dec. 31, 2021
Short-term debt	856	2,841
Short-term debt from related parties	11	8
Current portion of long-term debt	669	473
Current portion of lease liabilities	851	832
Current portion of bonds	649	618
Current portion of convertible bonds	–	–
Long-term debt, less current portion	2,166	2,127
Lease liabilities, less current portion	5,741	5,758
Bonds, less current portion	16,329	14,016
Convertible bonds	491	482
Long-term liabilities to and loans from related parties	–	0
Debt	**27,763**	**27,155**
less cash and cash equivalents	2,749	2,764
Net debt	**25,014**	**24,391**

Net debt excluding lease liabilities amounted to €18,422 million at December 31, 2022 (December 31, 2021: €17,801 million).

The following table shows the long-lived assets by geographical region:

€ in millions	Dec. 31, 2022	Dec. 31, 2021
Germany	11,400	11,270
Spain	7,774	7,671
Europe (excluding Germany and Spain)	4,148	3,765
North America	28,749	26,147
Asia-Pacific	2,526	2,612
Latin America	1,035	874
Africa	76	73
Total long-lived assets[1]	**55,708**	**52,412**

[1] The aggregate amount of long-lived assets is the sum of non-current assets less deferred tax assets and less other non-current financial assets.

In 2022, the Fresenius Group generated revenue of €8,766 million (2021: €8,443 million) in Germany. Revenue in the United States was €15,766 million at actual rates (2021: €14,079 million) and €14,038 million in constant currency in 2022.

In 2022, the segment Fresenius Medical Care generated other revenue in the amount of €555 million (2021: €516 million), Fresenius Kabi €6 million (2021: €3 million), Fresenius Helios €12 million (2021: €12 million) and Fresenius Vamed €4 million (2021: €4 million). All other revenue is revenue from contracts with customers.

36. SHARE-BASED COMPENSATION PLANS

COMPENSATION COST IN CONNECTION WITH THE SHARE-BASED COMPENSATION PLANS OF THE FRESENIUS GROUP

In 2021, the Fresenius Group recognized compensation cost in an amount of €1 million for stock options granted in 2017 for the last time. There will be no further expenses for stock options granted under the Stock Option Plan 2013. For stock incentive plans which are performance-based, the Fresenius Group recognized compensation cost over the vesting periods, based on the market values of the underlying stock at the grant date.

The expenses related to cash-settled share-based payment transactions are determined based upon the fair value at measurement date and the number of phantom stocks or performance shares granted which will be recognized over the vesting period. In 2022, the Fresenius Group recognized income of €5 million (2021: expenses of €27 million) in connection with cash-settled share-based payment transactions. At December 31, 2022, the Fresenius Group has accrued €25 million (December 31, 2021: €72 million) for its share-based compensation plans.

SHARE-BASED COMPENSATION PLANS OF FRESENIUS SE & CO. KGAA

Description of the Fresenius SE & Co. KGaA share-based compensation plans in place

As of December 31, 2022, Fresenius SE & Co. KGaA had two share-based compensation plans in place: the Fresenius SE & Co. KGaA Long Term Incentive Program 2013 (2013 LTIP) which is based on stock options and phantom stocks and the Long Term Incentive Plan 2018 (LTIP 2018) which is solely based on performance shares. Currently, solely LTIP 2018 can be used to grant performance shares.

LTIP 2018

On April 12, 2018 and March 15, 2018, respectively, the Management Board and Supervisory Board of the general partner, Fresenius Management SE, resolved the Long Term Incentive Plan 2018 (LTIP 2018).

The LTIP 2018 is based solely on virtual stocks (performance shares). The performance shares issued through the plan are non-equity-backed, virtual compensation instruments. When performance targets are reached and other prerequisites are met, they guarantee the entitlement to a cash payment by Fresenius SE & Co. KGaA or one of its affiliated companies.

The plan is available both for members of the Management Board (with the exception of the Chief Executive Officer of Fresenius Medical Care, who received his compensation from Fresenius Medical Care Management AG) and other executives. Performance shares may be granted once annually over a period of five years. The grant to the members of the Management Board is made by the Supervisory Board of the general partner, Fresenius Management SE, the grant to the other executives is made by the Management Board of Fresenius Management SE, in each case on the basis of a grant value determined at its discretion. The grant value is determined in consideration of the personal performance and the responsibilities of the concerned plan participant. The number of performance shares granted is calculated through applying the grant value and the average stock market price of the Fresenius share over the period of 60 stock exchange trading days prior to the grant date.

The number of performance shares may change over a period of four years, depending on the level of achievement of the performance targets described in more detail below. This could entail the entire loss of all performance shares or also – at maximum – the doubling of their number. The resulting number of performance shares, which is determined after a performance period of four years and based on the respective level of target achievement, is deemed finally earned four years after the date of the respective grant. The number of vested performance shares is then multiplied by the average stock exchange price of Fresenius SE & Co. KGaA's share over a period of 60 stock exchange trading days prior to the lapse of this vesting period plus the total of the dividends per share of Fresenius SE & Co. KGaA paid by Fresenius SE & Co. KGaA between the grant date and the vesting date. The resulting amount will be paid to the respective plan participant in cash. The potential disbursement entitlement of each member of the Management Board is limited to a maximum value of 250% of the grant value, the entitlement of all other plan participants is limited to a maximum value of 400%.

The LTIP 2018 has two equally weighted performance targets: firstly, the growth rate of the adjusted consolidated net income (adjusted for currency effects) and, secondly, the relative Total Shareholder Return based on the STOXX Europe 600 Health Care Index. Disbursement entitlement requires that at least one of the two performance targets must be reached or surpassed over the four-year performance period.

For the performance target "Net Income Growth Rate" a level of target achievement of 100% is reached when the same is at least 8% over the four-year performance period. If the growth rate falls below or corresponds to only 5%, the level of target achievement is 0%. If the growth rate is between 5% and 8%, the level of target achievement is between 0% and 100%, while, where the growth rate is between 8% and 20%, the level of target achievement will be between 100% and 200%. Intermediate values are calculated through linear interpolation. The net income is the consolidated net income attributable to shareholders of Fresenius SE & Co. KGaA reported in the consolidated financial statements of Fresenius SE & Co. KGaA prepared in accordance with IFRS, adjusted for extraordinary effects.

The determination of the adjusted net income (adjusted for currency effects) and the change in comparison with the adjusted net income (not adjusted for currency effects) of the previous Fresenius Group fiscal year will be verified in a binding manner by the auditors of Fresenius SE & Co. KGaA on the basis of the audited consolidated financial statements. For the ascertainment of the currency translation effects, all line items of the income statements of the companies that are included in the consolidated financial statements and which have a functional currency other than the reporting currency (euro) of the Fresenius Group are translated with the average exchange rates of the Fresenius Group fiscal year of the consolidated financial statements that are the basis for the comparison.

For the "Total Shareholder Return" performance target, a target achievement of 100% is met when the Total Shareholder Return of Fresenius SE & Co. KGaA in comparison with the Total Shareholder Return of the other companies of the STOXX Europe 600 Health Care Index achieves an average ranking within the benchmark companies, i. e. exactly in the middle (50th percentile), over the four-year performance period. If the ranking corresponds to the 25th percentile or less, the level of target achievement is 0%. Where the ranking is between the 25th percentile and the 50th percentile, the level of target achievement is between 0% and 100%; and, for a ranking between the 50th percentile and the 75th percentile, between 100% and 200%. Intermediate values will also be calculated through linear interpolation. Total Shareholder Return denotes the percentage change in the stock market price within the performance period including reinvested dividends and all capital measures, whereby capital measures are to be calculated through rounding down to the fourth decimal place.

The ranking values are determined using the composition of STOXX Europe 600 Health Care on the grant date. For equalization purposes, the relevant market price is the average market price in the period of 60 stock exchange trading days prior to the beginning and end of a performance period; the relevant currency is that of the main stock exchange of a company, which was listed in STOXX Europe 600 Health Care on the grant date.

A level of target achievement in excess of 200% is not possible for both performance targets.

To calculate the level of overall target achievement, the level of target achievement of the two performance targets are given equal weighting. The total number of performance shares vested on each plan participant is calculated through multiplying the number of performance shares granted by the overall target achievement.

The performance targets for the 2018 grant and for the 2019 grant were not achieved. Therefore, the performance shares granted in 2018 and 2019 forfeited.

In the event of violation of compliance rules, the Supervisory Board of Fresenius Management SE, in due exercise of its discretion, is entitled to reduce the number of performance shares vested on a member of the Management Board to zero. Regarding all other plan participants, such decision is made by the Management Board of Fresenius Management SE. Furthermore, Fresenius SE & Co. KGaA is entitled to a complete or partial reimbursement in the event of violation of compliance rules in the period of three years following disbursement.

2013 LTIP

The 2013 LTIP is comprised of the Fresenius SE & Co. KGaA Stock Option Plan 2013 (2013 SOP) and the Fresenius SE & Co. KGaA Phantom Stock Plan 2013 (2013 PSP). It combines the granting of stock options with the granting of phantom stock awards which entitle the holder to receive cash payments upon exercising the phantom stock. Each of the 2013 SOP and 2013 PSP making up the 2013 LTIP have been established under a stand-alone legal documentation.

2013 SOP

Under the 2013 SOP, which was approved by the Annual General Meeting of Fresenius SE & Co. KGaA on May 17, 2013, Fresenius Management SE was originally authorized to issue up to 8.4 million subscription rights for an amount of 8.4 million non-par value ordinary bearer shares of Fresenius SE & Co. KGaA until May 16, 2018.

Of the up to 8.4 million options, up to 1.6 million options were designated for members of the Management Board of Fresenius Management SE; up to 4.4 million options were designated for members of the management of directly or indirectly affiliated companies (except for Fresenius Medical Care) and up to 2.4 million options were designated for executive employees of Fresenius SE & Co. KGaA and its affiliated companies (except for Fresenius Medical Care).

In connection with the stock split in 2014, the total volume of not yet granted subscription rights increased in the same proportion as the subscribed capital (factor 3) as far as options had not yet been granted under the 2013 SOP. The same applies to the subsets of the subscription rights that are attributable to individual groups of participants. For stock options that were granted before the stock split 2014 came into effect, the entitlement of the participants to receive new shares through the exercise of stock options increased in the same proportion as the subscribed capital (factor 3). The participants are now entitled to receive three bearer ordinary shares of Fresenius SE & Co. KGaA. The exercise price was reduced proportionally.

The granting of the options occurred in five annual tranches, each to the last Monday in July or the first Monday in December. With respect to new options, the Supervisory Board of Fresenius Management SE determined the stock options granted to members of Fresenius Management SE's Management Board, whereas the Management Board of Fresenius Management SE determined the other participants in the 2013 SOP and the stock options granted to them.

The exercise price of an option equals the volume-weighted average stock market price (closing price) of the non-par value ordinary bearer share of Fresenius SE & Co. KGaA in the electronic Xetra trading of Deutsche Börse AG in Frankfurt am Main, or a comparable successor system, on the last 30 calendar days prior to the respective grant date.

Options granted have an eight-year term but can be exercised only after a four-year vesting period. The exercise of options is subject to the condition precedent, in each case, that the annual success target within a four-year waiting period is achieved. The success target is achieved in each case if, after the granting of the options to the respective entitled person, either (i) the consolidated net income attributable to shareholders of Fresenius SE & Co. KGaA according to IFRS, adjusted for extraordinary effects and on a constant currency basis, has increased by at least 8% per annum in comparison to the previous year in each case within the waiting period, or (ii) – if this is not the case – the compounded annual growth rate of the consolidated net income attributable to shareholders of Fresenius SE & Co. KGaA according to IFRS, adjusted for extraordinary effects and on a constant currency basis, during the four years of the waiting period amounts to at least 8%. In the event that the success target within the four-year waiting period is not achieved for the individual years or for the compounded annual growth rate, the options issued in each case are forfeited in proportion to the non-achievement of the success target within the waiting period, i. e. by one quarter, two quarters, three quarters, or completely. In the years 2013 to 2019, the performance targets for stock options granted in 2013 to 2016 were met. For stock options granted in 2017, only one quarter of the performance target was achieved. Therefore, in 2020, three quarters of the stock options granted in 2017 were forfeited.

The adjusted net income attributable to shareholders of Fresenius SE & Co. KGaA according to IFRS (currency adjusted) and changes thereto compared to the adjusted net income according to IFRS (without currency adjustment) of the relevant comparison year shall be verified with binding effect in each case by the auditors of Fresenius SE & Co. KGaA on the basis of the audited consolidated financial statements. Upon exercise of vested options, Fresenius SE & Co. KGaA has the right to grant treasury shares in lieu of increasing capital by the issuance of new shares.

After the expiration of the waiting period, all options in respect of which the success target has been achieved may be exercised at any time outside the designated blackout periods.

The last options were granted in 2017.

2013 PSP

Fresenius SE & Co. KGaA's 2013 PSP was established in May 2013, together with the 2013 SOP in line with the 2013 LTIP. Awards of phantom stocks could be granted on each stock option grant date. Phantom stocks awarded under the 2013 PSP could be granted to the members of Fresenius Management SE's Management Board, the members of the management of directly or indirectly affiliated companies (except for Fresenius Medical Care) and to executive employees of Fresenius SE & Co. KGaA and its affiliated companies (except for Fresenius Medical Care).

The holders of phantom stocks, that had been issued before the stock split 2014 came into effect, were granted an economic compensation through retroactively tripling the number of phantom stocks granted before the stock split 2014 came into effect.

As under the 2013 SOP, the Supervisory Board of Fresenius Management SE determined the phantom stocks granted to members of Fresenius Management SE's Management Board, whereas the Management Board of Fresenius Management SE determined the other participants in the 2013 PSP and the phantom stocks granted to them.

Phantom stock awards under the 2013 PSP entitled the holder to receive a cash payment. Each phantom stock award entitled the holder to receive the volume-weighted average stock market price (closing price) of the non-par value ordinary bearer share of Fresenius SE & Co. KGaA in the electronic Xetra trading of Deutsche Börse AG in Frankfurt am Main, or a comparable successor system, during the last three months prior to the date the phantom stock was exercised.

The exercise of phantom stock was subject to the condition precedent, in each case, that the annual success target within a four-year waiting period was achieved. After the expiration of the waiting period, all exercisable phantom stocks were deemed to be exercised and cashed out on March 1 following the end of the waiting period (or the following banking day). At December 31, 2022, there was no provision for phantom stocks issued under the 2013 PSP. At December 31, 2021, the provision for phantom stocks issued in 2017 that were exercised and paid out on March 1, 2022, amounted to €1 million.

The last phantom stocks were granted in 2017. By the end of 2022, all phantom stocks were paid out.

Transactions during 2022 and 2021

On September 12, 2022, Fresenius SE & Co. KGaA awarded 1,528,594 performance shares under the LTIP 2018, the total fair value at the grant date being €40 million, including 328,818 performance shares valued at €9 million to the members of the Management Board of Fresenius Management SE. The fair value per performance share at the grant date was €26.30.

On September 13, 2021, Fresenius SE & Co. KGaA awarded 915,105 performance shares under the LTIP 2018, the total fair value at the grant date being €41 million, including 193,800 performance shares valued at €9 million to the members of the Management Board of Fresenius Management SE. The fair value per performance share at the grant date was €44.75.

During the fiscal year 2022, no stock options were exercised. During the fiscal year 2021, Fresenius SE & Co. KGaA received cash of €32 million from the exercise of 961,234 stock options. The average stock price of the ordinary share at the exercise date was €44.32.

At December 31, 2022, 3,583,234 stock options issued under the 2013 LTIP were outstanding and exercisable. The members of the Fresenius Management SE Management Board held 461,250 stock options. At December 31, 2022, the Management Board members of Fresenius Management SE held 462,507 performance shares and employees of Fresenius SE & Co. KGaA held 3,294,978 performance shares under the LTIP 2018.

At December 31, 2021, 4,967,507 stock options issued under the 2013 LTIP were outstanding and exercisable. The members of the Fresenius Management SE Management Board held 603,281 stock options. 38,592 phantom stocks issued under the 2013 LTIP were outstanding at December 31, 2021. The members of the Fresenius Management SE Management Board held 5,059 phantom stocks. At December 31, 2021, the Management Board members of Fresenius Management SE held 582,234 performance shares and employees of Fresenius SE & Co. KGaA held 2,367,562 performance shares under the LTIP 2018.

Stock option transactions are summarized as follows:

Ordinary shares December 31	Number of options	Weighted average exercise price in €	Number of options exercisable
Balance 2020	**6,117,024**	**54.44**	**5,633,679**
exercised	961,234	32.82	
forfeited	168,033	63.77	
expired	20,250	32.12	
Balance 2021	**4,967,507**	**58.40**	**4,967,507**
exercised	–		
forfeited	262,031	62.36	
expired	1,122,242	36.92	
Balance 2022	**3,583,234**	**64.84**	**3,583,234**

The following table provides a summary of outstanding and exercisable options for ordinary shares at December 31:

Range of exercise prices in €	**December 31, 2022**			December 31, 2021		
	Number of options	Weighted average remaining contractual life in years	Weighted average exercise price in €	Number of options	Weighted average remaining contractual life in years	Weighted average exercise price in €
35,01 – 40,00	–			1,144,742	0.58	36.92
60,01 – 65,00	1,508,589	0.58	60.64	1,616,095	1.59	60.66
65,01 – 70,00	1,637,938	1.57	66.05	1,741,963	2.57	66.05
70,01 – 75,00	436,707	2.58	74.77	464,707	3.58	74.77
	3,583,234	**1.28**	**64.84**	**4,967,507**	**1.89**	**58.40**

At December 31, 2022, the aggregate intrinsic value of exercisable options for ordinary shares was -€138 million (December 31, 2021: -€114 million).

SHARE-BASED COMPENSATION PLANS OF FRESENIUS MEDICAL CARE AG & CO. KGAA

General information on Fresenius Medical Care AG & Co. KGaA long-term incentive plans (performance shares)

As of December 31, 2022, Fresenius Medical Care AG & Co. KGaA (FMC-AG & Co. KGaA) has various share-based compensation plans, which may either be equity- or cash-settled.

These plans enable the members of the Management Board, the members of the management boards of affiliated companies, managerial staff members and the senior members of FMC-AG & Co. KGaA's managerial staff who serve on FMC-AG & Co. KGaA's Executive Committee (Executive Committee) to adequately participate in the long-term, sustained success of Fresenius Medical Care. The Fresenius Medical Care AG & Co. KGaA Long Term Incentive Plan 2016 (LTIP 2016), the Fresenius Medical Care Management Board Long Term Incentive Plan 2019 (MB LTIP 2019), the Fresenius Medical Care AG & Co. KGaA Long Term Incentive Plan 2019 (LTIP 2019), the Fresenius Medical Care Management Board Long Term Incentive Plan 2020 (MB LTIP 2020) and the Fresenius Medical Care AG & Co. KGaA Long Term Incentive Plan 2022+ (LTIP 2022+) are each variable compensation programs with long-term incentive effects which allocate or allocated so-called performance shares. Performance shares are non-equity, cash-settled virtual compensation instruments which may entitle plan participants to receive a cash payment depending on the achievement of predefined performance targets further defined below as well as FMC-AG & Co. KGaA's share price development.

The following table provides an overview of these plans.

	LTIP 2022+	MB LTIP 2020	LTIP 2019	MB LTIP 2019	LTIP 2016
Eligible persons	Other plan participants	Members of the Management Board and certain members of the Executive Committee	Other plan participants	Members of the Management Board	Members of the Management Board and other plan participants
Years in which an allocation occurred	2022	2020–2022	2019–2021	2019	2016–2018
Months in which an allocation occurred	July, December	November (2020), March (2021, 2022), October (2022)	July, December	July, December	July, December

Under the current compensation system, the Supervisory Board of Fresenius Medical Care (FMC) Management AG defines an initial value for each Management Board member's allocation by applying a multiplier to the relevant base salary. Such allocation value equals 135% (multiplier of 1.35) of the relevant base salary. In case of appointments to the Management Board during a fiscal year, the amount to be allocated to such member can be pro-rated. For other plan participants, the determination of the allocation value will be made by the Management Board, taking into account the individual responsibility of each plan participant. The initial allocation value is determined in the currency in which the respective participant receives his or her base salary at the time of the allocation. In order to determine the number of performance shares each plan participant receives, the respective allocation value will be divided by the value per performance share at the time of the allocation, which is mainly determined based on the average price of FMC-AG & Co. KGaA's shares over a period of 30 calendar days prior to the respective allocation date.

The number of allocated performance shares may change over the performance period of three years, depending on the level of achievement of the following: (i) revenue growth at constant currency (revenue growth),

(ii) net income growth at constant currency (net income growth) and (iii) return on invested capital (ROIC).

Revenue, net income and ROIC are determined according to FMC-AG & Co. KGaA's consolidated reported and audited figures in euro for the financial statements prepared in accordance with IFRS, applying the respective plan terms. Revenue growth and net income growth, for the purpose of the relevant plan, are determined at constant currency.

Fresenius Medical Care AG & Co. KGaA long-term incentive plans during 2022 (performance shares)

The supervisory board of FMC Management AG has approved and adopted the MB LTIP 2020 effective January 1, 2020, for members of the Management Board and, as subsequently agreed, certain members of the Executive Committee. For the members of the management boards of affiliated companies and managerial staff members, the Management Board has approved and adopted the LTIP 2022+ effective January 1, 2022.

For allocations in fiscal year 2022, the target achievements of the performance targets revenue growth and net income growth are calculated based on a compound annual growth rate (CAGR) over the 3-year performance period. The basis for the first annual growth rate is 2021. For ROIC, annual target values apply. For all three performance targets, target achievement corridors which will be used for the calculation of the respective target achievements were defined.

For allocations in fiscal year 2022, the degree of target achievement for all three performance targets is weighted with 1/3 for the purpose of determining the overall target achievement at the end of the performance period. The relevant target achievement for revenue growth and net income growth is determined based on the CAGR over the entire performance period. The relevant target achievement for the ROIC target is determined based on the average annual target achievement for the ROIC during the performance period (i.e., 1/3 weighting per performance year). The overall target achievement will not exceed 200%.

The number of performance shares allocated to plan participants at the beginning of the performance period is multiplied with the degree of overall target achievement to determine the final number of performance shares.

For the MB LTIP 2020, the final number of performance shares is generally deemed earned three years after the day of an allocation. The number of such vested performance shares is then multiplied by the average FMC-AG & Co. KGaA share price over a period of 30 calendar days prior to the lapse of this vesting period. The respective resulting amount, which is capped in total at an amount equaling 400% of the allocation value received by the participant and which can be reduced to meet the respective maximum compensation of the participant, less taxes and contributions, is transferred to a credit institution which uses it for the purchase of shares of FMC-AG & Co. KGaA on the stock exchange on behalf of the participant. The shares acquired in this way are subject to a holding period of at least one year. After the lapse of this holding period, the participant can decide to further hold or sell these shares.

For the LTIP 2022+, the final number of performance shares generally vests three years after the allocation date. The number of vested performance shares is then multiplied with the average share price of FMC-AG & Co. KGaA during a period of 30 days prior to the end of this vesting period. The resulting amount, which is capped in total at an amount equaling 400% of the allocation value received by the participant, will then be paid to the plan participants as cash compensation.

Fresenius Medical Care AG & Co. KGaA long-term incentive plans during 2016–2021 (performance shares)

Allocations under the LTIP 2016 could be made throughout 2016 to 2018, under the MB LTIP 2019 in 2019 and under the LTIP 2019 throughout 2019 to 2021. Allocations under the MB LTIP 2020 can be made since January 1, 2020.

For performance shares allocated throughout 2020 to 2021, for the fiscal years 2020, 2021 and 2022, an annual target achievement level of 100% will be reached for the revenue growth performance target if revenue growth is 6%; revenue growth of 1% will lead to a target achievement level of 0% and the maximum target achievement level of 200% will be reached in case of revenue growth of at least 11%. If revenue growth ranges between these values, the degree of target achievement will be linearly interpolated between these values.

For performance shares allocated throughout 2020 to 2021, for the fiscal years 2020, 2021 and 2022, an annual target achievement level of 100% for the net income growth performance target will be reached if net income growth is 5%. In case of net income growth of 0%, the target achievement level will also be 0%; the maximum target achievement of 200% will be reached in the case of net income growth of at least 10%. If net income growth ranges between these values, the degree of target achievement will be linearly interpolated between these values.

For performance shares allocated throughout 2020 to 2021, for the fiscal years 2020, 2021 and 2022, an annual target achievement level of 100% for the ROIC performance target will be reached if ROIC is 6.0%. In case of a ROIC of 5.5%, the target achievement level will be 0%; the maximum target achievement of 200% will be reached in the case of a ROIC of at least 6.5%. Between these values, the degree of target achievement will be determined by means of linear interpolation.

For performance shares allocated throughout 2016 to 2019, for each individual year of the three-year performance period, an annual target achievement level of 100% will be reached for the revenue growth performance target if revenue growth is 7%; revenue growth of 0% will lead to a target achievement level of 0% and the maximum target achievement level of 200% will be reached in case of revenue growth of at least 16%. If revenue growth ranges between these values, the degree of target achievement will be linearly interpolated between these values.

For performance shares allocated throughout 2016 to 2019, for each individual year of the three-year performance period, an annual target achievement level of 100% for the net income growth performance target will be reached if net income growth is 7%. In case of net income growth of 0%, the target achievement level will also be 0%; the maximum target achievement of 200% will be reached in the case of net income growth of at least 14%. Between these values, the degree of target achievement will be determined by means of linear interpolation.

For performance shares allocated throughout 2016 to 2019, an annual target achievement level of 100% for ROIC will be reached if the target ROIC as defined for the applicable year is reached. For performance shares allocated throughout 2016 to 2019, the target ROIC is 7.3% for 2016, 7.5% for 2017, 7.7% for 2018, 7.9% for 2019, 8.1% for 2020 and 8.1% for 2021. A target achievement level of 0% will be reached if the ROIC falls below the target ROIC for the applicable year by 0.2 percentage points or more, whereas the maximum target achievement level of 200% will be reached if the target ROIC for the respective year is exceeded by 0.2 percentage points or more. The degree of target achievement will be determined by means of linear interpolation if the ROIC ranges between these values. In case the annual ROIC target achievement level in the third year of a performance period for performance shares allocated throughout years 2016 to 2019 is equal to or higher than the ROIC target achievement level in each of the two previous years of such performance period, the ROIC target achievement level of the third year is deemed to be achieved for all years of the applicable performance period.

For performance shares allocated throughout 2016 to 2021, the target achievement level for each of the three performance targets will be weighted annually at one-third to determine the yearly target achievement for each year of the three-year performance period. The level of overall target achievement over the three-year performance period will then be determined on the basis of the mean of these three average yearly target achievements. The overall target achievement can be in a range of 0% to 200%.

For performance shares allocated in fiscal year 2019 under the LTIP 2019, the level of target achievement may be subject to an increase if certain targets in relation to the second phase of FMC-AG & Co. KGaA's Global Efficiency Program (GEP-II targets), which are measured at constant currency, and in relation to the Free Cash Flow (Free Cash Flow target) are achieved. For these performance shares, the overall target achievement shall be increased by 20 percentage points if the GEP-II targets achievement is 100%. Furthermore, the overall target achievement for these performance shares shall be increased by 20 percentage points if the free cash flow target achievement is 200%. In case of a GEP-II targets achievement between 0% and 100% and a free cash flow target achievement between 0% and 200%, the increase of the overall target achievement will be calculated by means of linear interpolation. The overall target achievement shall not exceed 200%.

The number of performance shares allocated to the plan participants at the beginning of the performance period will each be multiplied by the level of overall target achievement in order to determine the final number of performance shares.

For the MB LTIP 2020, the final number of performance shares is generally deemed earned three years after the day of an allocation. The number of such vested performance shares is then multiplied by the average FMC-AG & Co. KGaA share price over a period of 30 calendar days prior to the lapse of this vesting period. The respective resulting amount, which is capped in total at an amount equaling 400% of the allocation value received by the participant and which can be reduced to meet the respective maximum compensation of the participant, less taxes and contributions, is transferred to a credit institution which uses it for the purchase of shares of FMC-AG & Co. KGaA on the stock exchange on behalf of the participant. The shares acquired in this way are subject to a holding period of at least one year. After the lapse of this holding period, the participant can decide to further hold or sell these shares.

For the LTIP 2019, the final number of performance shares is generally deemed earned three years after the day of a respective allocation. The number of such vested performance shares is then multiplied by the average FMC-AG & Co. KGaA share price over a period of 30 calendar days prior to the lapse of this vesting period. The respective resulting amount, which is capped in total at an amount equaling 400% of the allocation value received by the participant, will then be paid to the plan participants as cash compensation.

For the MB LTIP 2019, the final number of performance shares is generally deemed earned four years after the day of a respective allocation. The number of such vested performance shares is then multiplied by the average FMC-AG & Co. KGaA share price over a period of 30 calendar days prior to the lapse of this vesting period. The resulting amount will then be paid to the plan participants as cash compensation.

For the LTIP 2016, the final number of performance shares is generally deemed earned four years after the day of an allocation. The number of such vested performance shares is then multiplied by the average FMC-AG & Co. KGaA share price over a period of 30 calendar days prior to the lapse of this vesting period. The resulting amount will then be paid to the plan participants as cash compensation.

Fresenius Medical Care AG & Co. KGaA Long Term Incentive Program 2011 (stock options and phantom stocks)

On May 12, 2011, the Fresenius Medical Care AG & Co. KGaA Stock Option Plan 2011 (2011 SOP) was established by resolution of FMC-AG & Co. KGaA)'s Annual General Meeting. The 2011 SOP, together with the Phantom Stock Plan 2011, which was established by resolution of FMC Management AG's Management and Supervisory Boards, forms FMC-AG & Co. KGaA's Long Term Incentive Program 2011 (LTIP 2011). Under the LTIP 2011, participants were granted awards, which consisted of a combination of stock options and phantom stocks. Awards under the LTIP 2011 were subject to a four-year vesting period. Vesting of the awards granted was subject to achievement of predefined performance targets. The 2011 SOP was established with a conditional capital increase up to €12 million subject to the issue of up to 12 million non-par value bearer ordinary shares with a nominal value of €1.00 per share. The final grant under the LTIP 2011 was made in December 2015.

Stock options granted under the LTIP 2011 have an eight-year term and can be exercised for the first time after a four-year vesting period. The exercise price of stock options granted under the LTIP 2011 shall be the average stock exchange price on the Frankfurt Stock Exchange of FMC-AG & Co. KGaA's shares during the 30 calendar days immediately prior to each grant date. Stock options granted under the LTIP 2011 to U.S. participants are non-qualified stock options under the United States Internal Revenue Code of 1986, as amended. Stock options under the LTIP 2011 are not transferable by a participant or a participant's heirs, and may not be transferred, pledged, assigned, or disposed of otherwise.

Phantom stock awards under the LTIP 2011 entitled the holders to receive payment in euro from FMC-AG & Co. KGaA upon exercise of the phantom stock. The payment per phantom stock in lieu of the issuance of such stock was based upon the share price on the Frankfurt Stock Exchange of one of FMC-AG & Co. KGaA's shares on the exercise date. Phantom stock awards had a five-year term and could be exercised for the first time after a four-year vesting period. For participants who were U.S. taxpayers, the phantom stock was deemed to be exercised in any event in the month of March following the end of the vesting period.

Transactions during 2022 and 2021

During 2022, FMC-AG & Co. KGaA allocated 241,835 performance shares under the MB LTIP 2020 at a measurement date weighted average fair value of €28.37 each and a total fair value of €7 million, which will be revalued if the fair value changes. The total fair value will be amortized over the vesting period.

During 2022, FMC-AG & Co. KGaA allocated 1,737,591 performance shares under the LTIP 2022+ at a measurement date weighted average fair value of €27.33 each and a total fair value of €47 million, which will be revalued if the fair value changes. The total fair value will be amortized over the vesting period.

During 2021, FMC-AG & Co. KGaA allocated 192,446 performance shares under the MB LTIP 2020 at a measurement date weighted average fair value of €54.69 each and a total fair value of €11 million, which will be revalued if the fair value changes. The total fair value will be amortized over the vesting period.

During 2021, FMC-AG & Co. KGaA allocated 935,814 performance shares under the LTIP 2019 at a measurement date weighted average fair value of €53.27 each and a total fair value of €50 million, which will be revalued if the fair value changes. The total fair value will be amortized over the vesting period.

During 2022, FMC-AG & Co. KGaA received cash of €20 million from the exercise of stock options. The intrinsic value of stock options exercised in 2022 was €2 million.

During 2021, FMC-AG & Co. KGaA received cash of €6 million from the exercise of stock options. The intrinsic value of stock options exercised in 2021 was €2 million.

Information on holdings under share-based plans

At December 31, the members of the Management Board and plan participants other than the members of the Management Board held the following performance shares under the share-based plans:

	2022			2021		
Outstanding Performance Shares	**Members of the Management Board**	**Other plan participants**	**Total**	Members of the Management Board	Other plan participants	Total
LTIP 2022+	–	1,676,091	1,676,091	–	–	–
MB LTIP 2020	409,511	163,031	572,542	352,053	–	352,053
LTIP 2019	–	1,525,120	1,525,120	8,869	2,399,649	2,408,518
MB LTIP 2019	24,326	19,372	43,698	102,435	12,564	114,999
LTIP 2016	–	–	–	56,624	366,059	422,683

Additionally, at December 31, 2022, the members of the Management Board of FMC Management AG held 209,400 stock options (December 31, 2021: 455,970) and plan participants other than the members of the Management Board held 2,261,716 stock options (December 31, 2021: 2,557,339) under the 2011 SOP.

Additional information on share-based plans

The table below provides reconciliations for options outstanding at December 31, 2022, 2021 and 2020:

Stock options for shares	Number of options in thousands	Weighted average exercise price in €
Balance at December 31, 2020	**3,201**	**71.50**
exercised[1]	128	49.83
expired	60	70.60
Balance at December 31, 2021	**3,013**	**72.44**
exercised[2]	409	49.93
expired	133	56.55
Balance at December 31, 2022	**2,471**	**77.02**

[1] The average share price at the date of exercise of the options was €65.92.
[2] The average share price at the date of exercise of the options was €54.00.

The following table provides a summary of fully vested options outstanding and exercisable at December 31:

Range of exercise prices in €	**December 31, 2022** Number of options	**December 31, 2022** Weighted average remaining contractual life in years	**December 31, 2022** Weighted average exercise price in €	December 31, 2021 Number of options	December 31, 2021 Weighted average remaining contractual life in years	December 31, 2021 Weighted average exercise price in €
45,01 – 50,00	–			488,745	0.57	49.93
55,01 – 60,00	–			31,080	0.92	58.63
75,01 – 80,00	2,471,116	0.58	77.02	2,493,484	1.58	77.02
	2,471,116	**0.58**	**77.02**	**3,013,309**	**1.41**	**72.44**

37. RELATED PARTY TRANSACTIONS

In 2022, €28 million (2021: €18 million) were paid to Fresenius Management SE as compensation for the Management Board and the Supervisory Board, general partners' fees and other reimbursements of out-of pocket expenses. At December 31, 2022, there were outstanding liabilities payable to Fresenius Management SE in the amount of €62 million (December 31, 2021: €49 million), consisting mainly of pension obligations and Management Board compensation (see page 243 ff.).

The aforementioned payments are net amounts. In addition, VAT was paid.

In 2022 and 2021, the Else Kröner-Fresenius-Stiftung was paid the dividends which it is entitled as a shareholder in the ordinary share capital of Fresenius SE & Co. KGaA.

Fresenius Medical Care has entered into exclusive supply agreements to purchase certain pharmaceuticals from, as well as certain exclusive distribution agreements with, its associate Vifor Fresenius Medical Care Renal Pharma Ltd. Under the terms of certain unconditional purchase agreements, Fresenius Medical Care is obligated to purchase approximately €1,272 million of pharmaceuticals, of which €363 million is committed at December 31, 2022 for 2023.

The terms of these agreements extend over four years. In the fiscal year 2022, the Fresenius Group purchased goods and services in a total amount of €463 million from Vifor Fresenius Medical Care Renal Pharma Ltd. (2021: €446 million).

Fresenius Vamed participates in project entities which are established for long-term defined periods of time and for the specific purpose of constructing and operating healthcare facilities and thermal centers. Fresenius Vamed exercises significant influence over these entities, which is why they are consolidated at equity. The project entities generated approximately €144 million in revenue in 2022 (2021: €113 million). Fresenius Vamed has concluded operating and service agreements with the project entities, which generally have an indefinite term and a total annual volume of about €8 million. The project entities finance themselves mainly through debt, profit participation rights and investment grants. Assets and liabilities relating to the project entities are not material. Fresenius Vamed made no payments to the project entities other than contractually stipulated. From today's perspective and due to the contractual situation, Fresenius Vamed is not exposed to any material risk of loss from these project entities.

38. SUBSEQUENT EVENTS

In February 2023, Fresenius announced that it intends to deconsolidate the business segment Fresenius Medical Care through a change of legal form of Fresenius Medical Care AG & Co. KGaA into a stock corporation (Aktiengesellschaft). The conversion shall take effect in the course of the year subject to the required approval of the General Meeting of Fresenius Medical Care AG & Co. KGaA and the registration in the commercial register. For this purpose, an extraordinary General Meeting of Fresenius Medical Care AG & Co. KGaA will decide on the proposal for the conversion into a stock corporation (Aktiengesellschaft).

The months of January and February were characterized worldwide by a regionally varying development of the COVID-19 pandemic. The further development of the global situation and its impact on Fresenius remain uncertain.

Russia's ongoing war against Ukraine and the associated price increases, especially for energy, raw materials, and transport, will continue to have a direct and indirect negative impact on the business activities of the Fresenius Group, which cannot be estimated at present.

The development of personnel costs and the disruption of supply chains also remain issues on a global level. Their impact on Fresenius will be continuously analyzed in detail.

Beyond that, there have been no significant changes in the Fresenius Group's operating environment following the end of the fiscal year 2022 until February 21, 2023. No other events of material importance on the assets and liabilities, financial position, and results of operations of the Group have occurred following the end of the fiscal year.

39. COMPENSATION OF THE MANAGEMENT BOARD AND THE SUPERVISORY BOARD

Detailed and individualized information regarding the compensation of the members of the Management Board and of the Supervisory Board is disclosed in the Compensation Report.

The compensation of the Management Board of Fresenius Management SE is, as a whole, performance-based and geared towards promoting sustainable corporate development. It is composed of the following elements:

- non-performance-based compensation (fixed compensation and fringe benefits)
- short-term performance-based compensation (one-year variable compensation (bonus))
- components with long-term incentive effects (multi-year variable compensation comprising performance shares and postponed payments of the one-year variable compensation / of the bonus)

The cash compensation paid to the Management Board for the performance of its responsibilities was €12,407 thousand (2021: €16,057 thousand). Thereof, €8,958 thousand (2021: €8,602 thousand) is not performance-based and €3,449 thousand (2021: €7,455 thousand is performance-based. The amount of the short-term performance-based compensation depends on the achievement of targets relating to the net income and the revenue of the Fresenius Group and the business segments as well as on the achievement of sustainability criteria. As a long-term incentive component, the members of the Management Board received 321,213 performance shares of Fresenius SE & Co. KGaA

(2021: 193,800) and 48,680 performance shares of Fresenius Medical Care AG & Co. KGaA (2021: 40,894) in the equivalent value of €11,331 thousand (2021: €10,979 thousand).

The total compensation of the Management Board was €23,738 thousand (2021: €27,036 thousand).

In the fiscal year 2022, the Fresenius Group recognized expense, under IFRS, from share-based compensation plans for the Management Board of €308 thousand (2021: €1,131 thousand), a cost for pension plans (current and past service cost) for the members of the Management Board of €4,129 thousand (2021: €5,774 thousand) and expenses for early termination of service agreements of €13,309 thousand (2021: €6,336 thousand). In accordance with IFRS, the total compensation expense for the Management Board recognized in the statement of income amounted to €30,153 thousand (2021: €29,298 thousand). In addition, there were outstanding balances of €13,111 thousand (2021: €53,158 thousand) for members of the Management Board at the end of the fiscal year, mainly for pension commitments and performance-related compensation. Terms and conditions of long-term variable compensation are detailed under note 36, Share-based compensation plans. Pension commitments arise under defined benefit and defined contribution plans. The amount of the benefits is calculated based on the amount of the pensionable income and is generally paid out in installments or as a lump sum upon retirement or attainment of retirement age.

The total compensation paid to the Supervisory Board of Fresenius SE & Co. KGaA and its committees was €2,447 thousand in 2022 (2021: €2,502 thousand). The total compensation paid to the Supervisory Board of Fresenius Management SE and its committees was €1,305 thousand in 2022 (2021: €1,353 thousand).

The members of the Supervisory Board receive a fixed compensation, fringe benefits (consisting of reimbursement of expenses and insurance coverage) and, if they perform any duties on the Audit Committee of the Supervisory Board, remuneration for this committee activity. At the end of the fiscal year, there were outstanding balances for the remuneration of the members of the supervisory boards amounting to €3,752 thousand (2021: €3,855 thousand). In addition, the employee representatives on the Supervisory Board receive a regular salary from their respective employment contracts.

In 2022, based on pension commitments to former members of the Management Board, €13,166 thousand (2021: €8,102 thousand) was paid. The pension obligation according to IFRS for these persons amounted to €49,346 thousand in 2022 (2021: €34,714 thousand).

In the fiscal years 2022 and 2021, no loans or advance payments on future compensation components were granted to any member of the Management Board of Fresenius Management SE.

40. AUDITOR'S FEES

In 2022 and 2021, fees for the auditor PricewaterhouseCoopers GmbH, Frankfurt am Main (PwC), and its affiliates were expensed as follows:

	2022		2021	
€ in millions	Total	Germany	Total	Germany
Audit fees	29	9	23	8
Audit-related fees	3	2	3	3
Tax consulting fees	1	–	1	0
Other fees	3	3	2	2
Total auditor's fees	**36**	**14**	**29**	**13**

The leading auditor has been responsible for the audit of the consolidated financial statements since 2020.

In the fiscal years 2022 and 2021, both worldwide and in Germany, audit-related fees and other fees mainly related to the review of quarterly financial statements, audit services for the German hospitals of the Fresenius Group and in connection with financing activities and consulting fees with regard to corporate governance. In 2022 and

2021, tax consulting fees are fees for professional services rendered by Fresenius Group's auditor for tax compliance, tax consulting associated with international transfer prices, as well as support services related to tax audits.

41. CORPORATE GOVERNANCE

For each consolidated stock exchange listed entity, the declaration pursuant to Section 161 of the German Stock Corporation Act (Aktiengesetz) has been issued and made available to shareholders on the website of Fresenius SE & Co. KGaA (www.fresenius.com/corporate-governance), and of Fresenius Medical Care AG & Co. KGaA (www.freseniusmedicalcare.com).

42. PROPOSAL FOR THE DISTRIBUTION OF EARNINGS

The general partner and the Supervisory Board of Fresenius SE & Co. KGaA propose to the Annual General Meeting that the earnings for 2022 of Fresenius SE & Co. KGaA are distributed as follows:

in €	
Dividend proposal	518,178,294.84
Balance to be carried forward	443,212.62
Retained earnings	**518,621,507.46**

For the fiscal year 2022, a dividend of €0.92 per bearer ordinary share on 563,237,277 ordinary shares entitled to dividend is planned, corresponding to a total distribution of €518,178,294.84.

Bad Homburg v. d. H., February 21, 2023

Fresenius SE & Co. KGaA,
represented by:
Fresenius Management SE, its general partner

The Management Board

M. Sen | Dr. S. Biedenkopf | Dr. F. De Meo | H. Giza

S. Hennicken | Dr. E. Wastler

RESPONSIBILITY STATEMENT

"To the best of our knowledge, and in accordance with the applicable reporting principles, the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and profit or loss of the Group, and the Group management report includes a fair review of the development and performance of the business and the position of the Group, together with a description of the principal opportunities and risks associated with the expected development of the Group."

Bad Homburg v. d. H., February 21, 2023

Fresenius SE & Co. KGaA,
represented by:
Fresenius Management SE, its general partner

The Management Board

M. Sen Dr. S. Biedenkopf Dr. F. De Meo H. Giza

S. Hennicken Dr. E. Wastler

The following copy of the auditor's report also includes a "Report on the audit of the electronic renderings of the consolidated financial statements and the group management report prepared for disclosure purposes in accordance with § 317 Abs. 3b HGB" ("Separate report on ESEF conformity"). The subject matter (ESEF documents to be audited) to which the separate report on ESEF conformity relates is not attached. The audited ESEF documents can be inspected in or retrieved from the Federal Gazette.

Note: This is a translation of the German original. Solely the original text in German language is authoritative.

INDEPENDENT AUDITOR'S REPORT

To Fresenius SE & Co. KGaA, Bad Homburg v. d. Höhe

REPORT ON THE AUDIT OF THE CONSOLIDATED FINANCIAL STATEMENTS AND OF THE GROUP MANAGEMENT REPORT

Audit Opinions

We have audited the consolidated financial statements of Fresenius SE & Co. KGaA, Bad Homburg v. d. Höhe, and its subsidiaries (the Group), which comprise the consolidated statement of financial position as at 31 December 2022, and the consolidated statement of comprehensive income, consolidated statement of profit or loss, consolidated statement of changes in equity and consolidated statement of cash flows for the financial year from 1 January to 31 December 2022, and notes to the consolidated financial statements, including a summary of significant accounting policies.

In addition, we have audited the group management report of Fresenius SE & Co. KGaA for the financial year from 1 January to 31 December 2022. In accordance with the German legal requirements, we have not audited the content of the disclosure marked as unaudited in section "Internal Control System as Part of the Risk Management System" of the group management report.

In our opinion, on the basis of the knowledge obtained in the audit,

- the accompanying consolidated financial statements comply, in all material respects, with the IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § [Article] 315e Abs. [paragraph] 1 HGB [Handelsgesetzbuch: German Commercial Code] and, in compliance with these requirements, give a true and fair view of the assets, liabilities, and financial position of the Group as at 31 December 2022, and of its financial performance for the financial year from 1 January to 31 December 2022, and
- the accompanying group management report as a whole provides an appropriate view of the Group's position. In all material respects, this group management report is consistent with the consolidated financial statements, complies with German legal requirements and appropriately presents the opportunities and risks of future development. Our audit opinion on the group management report does not cover the content of the disclosure in section "Internal Control System as Part of the Risk Management System" referred to above.

Pursuant to § 322 Abs. 3 Satz [sentence] 1 HGB, we declare that our audit has not led to any reservations relating to the legal compliance of the consolidated financial statements and of the group management report.

Basis for the Audit Opinions

We conducted our audit of the consolidated financial statements and of the group management report in accordance with § 317 HGB and the EU Audit Regulation (No. 537/2014, referred to subsequently as "EU Audit Regulation") in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer [Institute of Public Auditors in Germany] (IDW). We performed the audit of the consolidated financial statements in supplementary compliance with the International Standards on Auditing (ISAs). Our responsibilities under those requirements, principles and standards are further described in the "Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report" section of our auditor's report. We are independent of the group entities in accordance with the requirements of European law and German commercial and professional law, and we have fulfilled our other German professional responsibilities in accordance with these requirements. In addition, in accordance with Article 10 (2) point (f) of the EU Audit Regulation, we declare that we have not provided non-audit services prohibited under Article 5 (1) of the EU Audit Regulation. We believe that the audit evidence we have obtained is sufficient and appropriate to provide a basis for our audit opinions on the consolidated financial statements and on the group management report.

Key Audit Matters in the Audit of the Consolidated Financial Statements

Key audit matters are those matters that, in our professional judgment, were of most significance in our audit of the consolidated financial statements for the financial year from 1 January to 31 December 2022. These matters were addressed in the context of our audit of the consolidated financial statements as a whole, and in forming our audit opinion thereon; we do not provide a separate audit opinion on these matters.

In our view, the matter of most significance in our audit was as follows:

I. Recognition and measurement of goodwill

Our presentation of this key audit matter has been structured as follows:

1. Matter and issue

2. Audit approach and findings

3. Reference to further information

Hereinafter we present the key audit matter:

I. Recognition and measurement of goodwill

1. In the Company's consolidated financial statements goodwill amounting in total to EUR 31,444 Mio (41.1% of total assets or 97.6% of equity) is reported under the "Goodwill" balance sheet item. In the financial year 2022, goodwill increased by EUR 2,501 million. This increase mainly results from the business combination Interwell Health and the acquisitions of mAbxience Holding S.L. und Ivenix, Inc.

   Goodwill is tested for impairment by the Company once a year or when there are indications of impairment to determine any possible need for write-downs. The impairment test is carried out at the level of the cash-generating units to which the relevant goodwill, including additions in the financial year, is allocated individually or as a group. The carrying amount of the relevant cash-generating units, including goodwill, is compared with the corresponding recoverable amount in the context of the impairment test. The recoverable amount is generally determined using the value in use. The present value of the future cash flows from the respective cash-generating units normally serves as the basis of valuation. Present values are calculated using discounted cash flow models. For this purpose, the approved three-year budgets as well as projections for years 4 to 10 of the respective cash-generating units form the starting point which are extrapolated based on assumptions about long-term rates of growth. Expectations relating to future market developments the effects of the changed macroeconomic environment, including mitigating measures, are also taken into account. The discount rate used is the weighted average cost of capital for the respective cash-generating units. The impairment test determined that no write-downs were necessary.

   The outcome of this valuation is dependent to a large extent on the estimates made by the executive directors with respect to the future cash inflows from the respective cash-generating units, the discount rate used, the rate of growth and other assumptions, and is therefore also against the background of the changed macroeconomic environment, including mitigating measures, subject to considerable uncertainty. Against this background and due to the complex nature of the valuation, this matter was of particular significance in the context of our audit.

2. As part of our audit, we assessed with the support of our internal valuation specialists the methodology used for the purposes of performing the impairment test, among other things. In doing so, we also assessed the acceptability of projecting beyond the budget period. Moreover, we reconciled, among other things, the future cash inflows used for the calculation with the approved three-year budgets and projections for years 4 to 10 of the respective cash-generating units. In doing so, we also assessed the appropriateness of the calculation including the applied growth rates, in particular by reconciling it with underlying documentation, the expected growth rate in respective markets and general and sector-specific market expectations. In this connection, we also evaluated the assessment of the executive directors regarding the effects of the changed macroeconomic environment, including mitigating measures, and assessed their consideration in the respective budgets of the respective cash-generating units and how they were taken into account in estimating the future cash flows. In addition, we assessed the appropriate consideration of the costs of Group functions. In the knowledge that even relatively small changes in the discount rate or the growth rates applied can have a material impact on the value of the entity calculated in this way, we focused our testing in particular on the parameters used to determine the discount rate as well as growth rates applied, and assessed the calculation models. In order to reflect the uncertainty inherent in the projections, we evaluated the sensitivity analyses performed by the Company and carried out our own sensitivity analyses for those groups of cash-generating units with low headroom (recoverable amount compared to carrying amount) and verified that the necessary disclosures were made in the notes to the consolidated financial statements.

   Overall, the estimations made as well as the valuation parameters and assumptions used by the executive directors are in line with our expectations and are also within the ranges considered by us to be reasonable.

3. The Company's disclosures on the balance sheet item "Goodwill" are contained in note 1. III. o), note 1.IV. a), note 2 and note 20 of the notes to the consolidated financial statements.

Other Information

The executive directors are responsible for the other information. The other information comprises the disclosure marked as unaudited in section "Internal Control System as Part of the Risk Management System" of the group management report as an unaudited part of the group management report.

The other information comprises further

- the statement on corporate governance pursuant to § 289f HGB and § 315d HGB
- the separate non-financial group report to comply with §§ 315b to 315c HGB
- the remuneration report pursuant to § 162 AktG [Aktiengesetz: German Stock Corporation Act], for which the supervisory board is also responsible
- all remaining parts of the annual report – excluding cross-references to external information – with the exception of the audited consolidated financial statements, the audited group management report and our auditor's report

Our audit opinions on the consolidated financial statements and on the group management report do not cover the other information, and consequently we do not express an audit opinion or any other form of assurance conclusion thereon.

In connection with our audit, our responsibility is to read the other information mentioned above and, in so doing, to consider whether the other information

- is materially inconsistent with the consolidated financial statements, with the group management report disclosures audited in terms of content or with our knowledge obtained in the audit, or
- otherwise appears to be materially misstated.

If, based on the work we have performed, we conclude that there is a material misstatement of this other information, we are required to report that fact. We have nothing to report in this regard.

Responsibilities of the Executive Directors and the Supervisory Board for the Consolidated Financial Statements and the Group Management Report

The executive directors are responsible for the preparation of the consolidated financial statements that comply, in all material respects, with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB and that the consolidated financial statements, in compliance with these requirements, give a true and fair view of the assets, liabilities, financial position, and financial performance of the Group. In addition, the executive directors are responsible for such internal control as they have determined necessary to enable the preparation of consolidated financial statements that are free from material misstatement, whether due to fraud (i.e., fraudulent financial reporting and misappropriation of assets) or error.

In preparing the consolidated financial statements, the executive directors are responsible for assessing the Group's ability to continue as a going concern. They also have the responsibility for disclosing, as applicable, matters related to going concern. In addition, they are responsible for financial reporting based on the going concern basis of accounting unless there is an intention to liquidate the Group or to cease operations, or there is no realistic alternative but to do so.

Furthermore, the executive directors are responsible for the preparation of the group management report that, as a whole, provides an appropriate view of the Group's position and is, in all material respects, consistent with the consolidated financial statements, complies with German legal requirements, and appropriately presents the opportunities and risks of future development. In addition, the executive directors are responsible for such arrangements and measures (systems) as they have considered necessary to enable the preparation of a group management report that is in accordance with the applicable German legal requirements, and to be able to provide sufficient appropriate evidence for the assertions in the group management report.

The supervisory board is responsible for overseeing the Group's financial reporting process for the preparation of the consolidated financial statements and of the group management report.

Auditor's Responsibilities for the Audit of the Consolidated Financial Statements and of the Group Management Report

Our objectives are to obtain reasonable assurance about whether the consolidated financial statements as a whole are free from material misstatement, whether due to fraud or error, and whether the group management report as a whole provides an appropriate view of the Group's position and, in all material respects, is consistent with the consolidated financial statements and the knowledge obtained in the audit, complies with the German legal requirements and appropriately presents the opportunities and risks of future development, as well as to issue an auditor's report that includes our audit opinions on the consolidated financial statements and on the group management report.

Reasonable assurance is a high level of assurance, but is not a guarantee that an audit conducted in accordance with § 317 HGB and the EU Audit Regulation and in compliance with German Generally Accepted Standards for Financial Statement Audits promulgated by the Institut der Wirtschaftsprüfer (IDW) and supplementary compliance with the ISAs will always detect a material misstatement. Misstatements can arise from fraud or error and are considered material if, individually or in the aggregate, they could reasonably be expected to influence the economic decisions of users taken on the basis of these consolidated financial statements and this group management report.

We exercise professional judgment and maintain professional skepticism throughout the audit. We also:

- Identify and assess the risks of material misstatement of the consolidated financial statements and of the group management report, whether due to fraud or error, design and perform audit procedures responsive to those risks, and obtain audit evidence that is sufficient and appropriate to provide a basis for our audit opinions. The risk of not detecting a material misstatement resulting from fraud is higher than for one resulting from error, as fraud may involve collusion, forgery, intentional omissions, misrepresentations, or the override of internal controls.
- Obtain an understanding of internal control relevant to the audit of the consolidated financial statements and of arrangements and measures (systems) relevant to the audit of the group management report in order to design audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an audit opinion on the effectiveness of these systems.
- Evaluate the appropriateness of accounting policies used by the executive directors and the reasonableness of estimates made by the executive directors and related disclosures.
- Conclude on the appropriateness of the executive directors' use of the going concern basis of accounting and, based on the audit evidence obtained, whether a material uncertainty exists related to events or conditions that may cast significant doubt on the Group's ability to continue as a going concern. If we conclude that a material uncertainty exists, we are required to draw attention in the auditor's report to the related disclosures in the consolidated financial statements and in the group management report or, if such disclosures are inadequate, to modify our respective audit opinions. Our conclusions are based on the audit evidence obtained up to the date of our auditor's report. However, future events or conditions may cause the Group to cease to be able to continue as a going concern.
- Evaluate the overall presentation, structure and content of the consolidated financial statements, including the disclosures, and whether the consolidated financial statements present the underlying transactions and events in a manner that the consolidated financial statements give a true and fair view of the assets, liabilities, financial position and financial performance of the Group in compliance with IFRSs as adopted by the EU and the additional requirements of German commercial law pursuant to § 315e Abs. 1 HGB.
- Obtain sufficient appropriate audit evidence regarding the financial information of the entities or business activities within the Group to express audit opinions on the consolidated financial statements and on the group management report. We are responsible for the direction, supervision and performance of the group audit. We remain solely responsible for our audit opinions.
- Evaluate the consistency of the group management report with the consolidated financial statements, its conformity with German law, and the view of the Group's position it provides.
- Perform audit procedures on the prospective information presented by the executive directors in the group management report. On the basis of sufficient appropriate audit evidence we evaluate, in particular, the significant assumptions used by the executive directors as a basis for the prospective information, and evaluate the proper derivation of the prospective information from these assumptions. We do not express a separate audit opinion on the prospective information and on the assumptions used as a basis. There is a substantial unavoidable risk that future events will differ materially from the prospective information.

We communicate with those charged with governance regarding, among other matters, the planned scope and timing of the audit and significant audit findings, including any significant deficiencies in internal control that we identify during our audit.

We also provide those charged with governance with a statement that we have complied with the relevant independence requirements, and communicate with them all relationships and other matters that may reasonably be thought to bear on our independence, and where applicable, actions taken to eliminate threats or safeguards applied.

From the matters communicated with those charged with governance, we determine those matters that were of most significance in the audit of the consolidated financial statements of the current period and are therefore the key audit matters. We describe these matters in our auditor's report unless law or regulation precludes public disclosure about the matter.

OTHER LEGAL AND REGULATORY REQUIREMENTS

REPORT ON THE ASSURANCE ON THE ELECTRONIC RENDERING OF THE CONSOLIDATED FINANCIAL STATEMENTS AND THE GROUP MANAGEMENT REPORT PREPARED FOR PUBLICATION PURPOSES IN ACCORDANCE WITH § 317 ABS. 3A HGB

Assurance Opinion

We have performed assurance work in accordance with § 317 Abs. 3a HGB to obtain reasonable assurance as to whether the rendering of the consolidated financial statements and the group management report (hereinafter the "ESEF documents") contained in the electronic file FSE_KGaA_KA_KLB_ESEF-2022-12-31.zip and prepared for publication purposes complies in all material respects with the requirements of § 328 Abs. 1 HGB for the electronic reporting format ("ESEF format"). In accordance with German legal requirements, this assurance work extends only to the conversion of the information contained in the consolidated financial statements and the group management report into the ESEF format and therefore relates neither to the information contained within these renderings nor to any other information contained in the electronic file identified above.

In our opinion, the rendering of the consolidated financial statements and the group management report contained in the electronic file identified above and prepared for publication purposes complies in all material respects with the requirements of § 328 Abs. 1 HGB for the electronic reporting format. Beyond this assurance opinion and our audit opinion on the accompanying consolidated financial statements and the accompanying group management report for the financial year from 1 January to 31 December 2022 contained in the "Report on the Audit of the Consolidated Financial Statements and on the Group Management Report" above, we do not express any assurance opinion on the information contained within these renderings or on the other information contained in the electronic file identified above.

Basis for the Assurance Opinion

We conducted our assurance work on the rendering of the consolidated financial statements and the group management report contained in the electronic file identified above in accordance with § 317 Abs. 3a HGB and the IDW Assurance Standard: Assurance Work on the Electronic Rendering, of Financial Statements and Management Reports, Prepared for Publication Purposes in Accordance with § 317 Abs. 3a HGB (IDW AsS 410 (06.2022)) and the International Standard on Assurance Engagements 3000 (Revised). Our responsibility in accordance therewith is further described in the "Group Auditor's Responsibilities for the Assurance Work on the ESEF Documents" section. Our audit firm applies the IDW Standard on Quality Management 1: Requirements for Quality Management in the Audit Firm (IDW QS 1).

Responsibilities of the Executive Directors and the Supervisory Board for the ESEF Documents

The executive directors of the Company are responsible for the preparation of the ESEF documents including the electronic renderings of the consolidated financial statements and the group management report in accordance with § 328 Abs. 1 Satz 4 Nr. [number] 1 HGB and for the tagging of the consolidated financial statements in accordance with § 328 Abs. 1 Satz 4 Nr. 2 HGB.

In addition, the executive directors of the Company are responsible for such internal control as they have considered necessary to enable the preparation of ESEF documents that are free from material non-compliance with the requirements of § 328 Abs. 1 HGB for the electronic reporting format, whether due to fraud or error.

The supervisory board is responsible for overseeing the process for preparing the ESEF documents as part of the financial reporting process.

Group Auditor's Responsibilities for the Assurance Work on the ESEF Documents

Our objective is to obtain reasonable assurance about whether the ESEF documents are free from material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error. We exercise professional judgment and maintain professional skepticism throughout the assurance work. We also:

- Identify and assess the risks of material non-compliance with the requirements of § 328 Abs. 1 HGB, whether due to fraud or error, design and perform assurance procedures responsive to those risks, and obtain assurance evidence that is sufficient and appropriate to provide a basis for our assurance opinion.
- Obtain an understanding of internal control relevant to the assurance work on the ESEF documents in order to design assurance procedures that are appropriate in the circumstances, but not for the purpose of expressing an assurance opinion on the effectiveness of these controls.
- Evaluate the technical validity of the ESEF documents, i.e., whether the electronic file containing the ESEF documents meets the requirements of the Delegated Regulation (EU) 2019/815 in the version in force at the date of the consolidated financial statements on the technical specification for this electronic file.
- Evaluate whether the ESEF documents provide an XHTML rendering with content equivalent to the audited consolidated financial statements and to the audited group management report.
- Evaluate whether the tagging of the ESEF documents with Inline XBRL technology (iXBRL) in accordance with the requirements of Articles 4 and 6 of the Delegated Regulation (EU) 2019/815, in the version in force at the date of the consolidated financial statements, enables an appropriate and complete machine-readable XBRL copy of the XHTML rendering.

FURTHER INFORMATION PURSUANT TO ARTICLE 10 OF THE EU AUDIT REGULATION

We were elected as group auditor by the annual general meeting on 13 May 2022. We were engaged by the supervisory board on 19 July 2022. We have been the group auditor of the Fresenius SE & Co. KGaA, Bad Homburg v. d. Höhe, without interruption since the financial year 2020.

We declare that the audit opinions expressed in this auditor's report are consistent with the additional report to the audit committee pursuant to Article 11 of the EU Audit Regulation (long-form audit report).

REFERENCE TO AN OTHER MATTER– USE OF THE AUDITOR'S REPORT

Our auditor's report must always be read together with the audited consolidated financial statements and the audited group management report as well as the assured ESEF documents. The consolidated financial statements and the group management report converted to the ESEF format – including the versions to be filed in the company register – are merely electronic renderings of the audited consolidated financial statements and the audited group management report and do not take their place. In particular, the "Report on the Assurance on the Electronic Rendering of the Consolidated Financial Statements and the Group Management Report Prepared for Publication Purposes in Accordance with § 317 Abs. 3a HGB" and our assurance opinion contained therein are to be used solely together with the assured ESEF documents made available in electronic form.

GERMAN PUBLIC AUDITOR RESPONSIBLE FOR THE ENGAGEMENT

The German Public Auditor responsible for the engagement is Dr. Bernd Roese.

Frankfurt am Main, February 21, 2023

PricewaterhouseCoopers GmbH
Wirtschaftsprüfungsgesellschaft
(Original German Version signed by:)

Dr. Ulrich Störk	Dr. Bernd Roese
Wirtschaftsprüfer	Wirtschaftsprüfer
(German Public Auditor)	(German Public Auditor)