

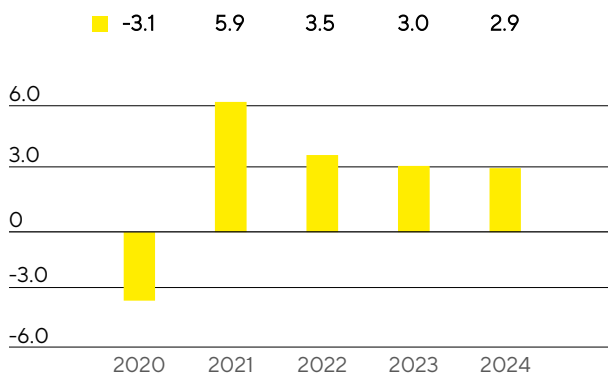
# Forecast Report

## Future Macroeconomic Environment

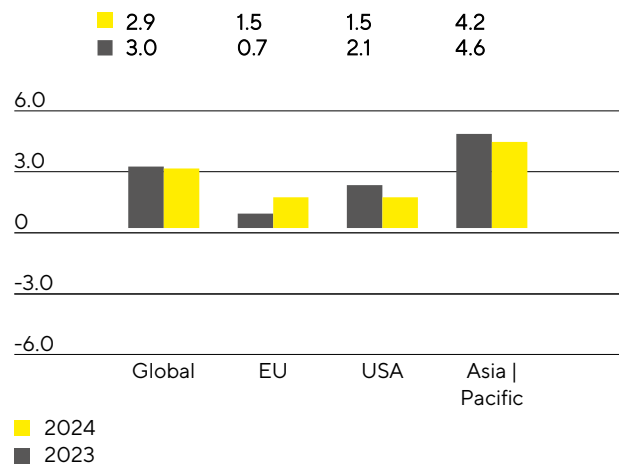
The International Monetary Fund (IMF) expects the global economy to expand by 2.9% in the current year and therefore at a rate below the historical average (2023: +3.0%). Growth in industrialized countries is expected at 1.4% (2023: +1.5%), while the forecast for emerging and developing countries is unchanged at 4.0%. The economic environment continues to be characterized by numerous risk factors, including a possible increase in raw material and food prices as a result of geopolitical tensions, persistently high inflation rates, which could necessitate central banks to further tighten monetary policy, as well as limited options for economic stimulus measures given high sovereign debt levels. The potential spread of China's real estate crisis also poses risks to global economic growth.

The IMF expects growth of 1.5% for the EU in 2024, compared with 0.7% in 2023. In Germany, Europe's largest economy, economic output is expected to increase by 0.9% (2023: -0.5%), while other European economies that are important for Sartorius, such as France and the United Kingdom, are also likely to expand, with growth rates of 1.3% (2023: +1.0%) and 0.6% (2023: +0.5%), respectively.

Global Development GDP  
in %



Gross Domestic Product by Region  
in %



Source: International Monetary Fund

Based on current estimates, the U.S. economy is expected to expand by 1.5% in 2024 (2023: +2.1%).

The Asia|Pacific economic region is forecast to grow by around 4.2% (2023: +4.6%), with GDP in China expected to increase by 4.2% (2023: +5.0%) and in India by 6.3% (2023: +6.3%). Other countries in this region that are important for Sartorius are also expected to grow. South Korea's GDP is forecast to go up by 2.2% (2023: +1.4%) and Japan's by 1.0% (2023: +2.0%).

## Exchange and Interest Rate Trends

The sharp rise in inflation has led to a more restrictive monetary policy and central banks raising key interest rates almost everywhere in the world since 2022. Based on expert estimates, key interest rates are not expected to rise further in 2024 and are likely to be cut moderately in the second half of the year. Key interest rates in the European Monetary Union are expected to decrease from 4.50% at the end of 2023 to up to 3.8% in 2024. The U.S. Federal Reserve is forecast to cut the key interest rate to an estimated 4.45% by the end of 2024.

Inflation expectations for both the eurozone and the United States are 2.7% for 2024.

The market consensus on the exchange rate of the euro to the U.S. dollar for the course of 2024 is that it will range between 1.07 euros to the U.S. dollar and 1.11 euros to the U.S. dollar.

Sources: International Monetary Fund, World Economic Outlook, October 2023; Bloomberg, 2023.

## Outlook for the Sectors

### Biopharmaceutical Industry Expected to Grow

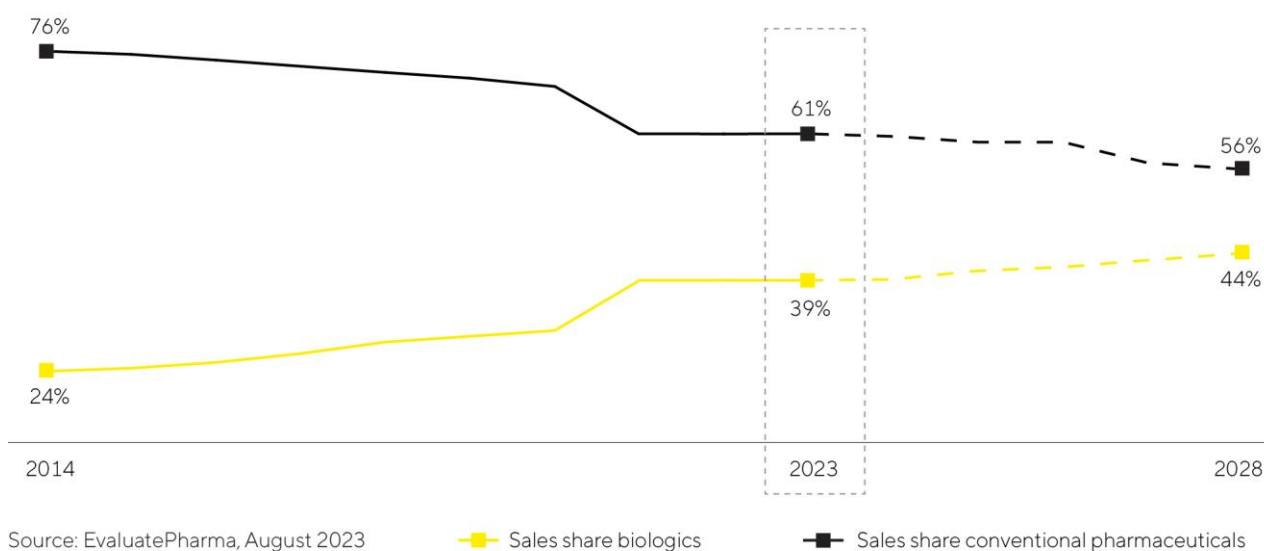
Strong, long-term trends drive growth in the pharmaceutical industry, which is almost entirely independent of business cycles. A number of different studies estimate that the global pharmaceutical market will grow by between 3% and 6% annually in the period up to 2027. Within the pharmaceutical market, the biopharma segment has been enjoying particularly strong performance for years and will continue to outperform the market according to various forecasts. Average annual growth is expected to be around 10% in the coming years. The market is anticipated to have a total value of around \$695 billion in 2028, which means that the share of biological medications and vaccines as a percentage of total revenue in the global pharmaceutical market could rise from the current 39% to 44%.

Growth is driven in particular by the increasing demand for medications from the growing and aging global population as well as the great catch-up potential and improved access to biopharmaceuticals in emerging markets. In addition, the number of approved biopharmaceutical medications is steadily increasing. Of the estimated 20,000+ medications in R&D pipelines, almost 45% are based on biological manufacturing processes. For example, biopharmaceuticals are increasingly being used in yet-to-be fully explored therapeutic areas and in the treatment of rare diseases that have so far been incurable. The pharma industry is increasingly concentrating on advanced therapies such as cell and gene therapeutics or biotechnologically processed tissue products. In 2023, more than 1,600 clinical trials with such treatment approaches were conducted, meaning that this area offers significant growth potential over the medium to long term. Innovative types of therapy for regenerative medicine and new substance classes, such as antibody-drug conjugates (ADCs) or mRNA-based drugs, are increasing the number and range of approved biopharmaceuticals in the long term and necessitating investments in innovative production technologies. As a result, they are key growth drivers.

Biosimilars, i.e., generic versions of reference biologics with comparable or better efficacy or fewer side effects than the original compounds, are also playing an increasingly important role in the growth of the biotechnology market. Current estimates indicate that by 2028, the market could grow by an annual average of around 15% and reach a total value of approximately \$67 billion. The significantly lower prices of biosimilars, particularly in emerging and developing countries, are creating new, affordable therapy options and are projected to result in increased demand and rising production volume. The development of national

production capacities to meet the growing demand for medications is receiving political support in these countries and is fueling the establishment of local biotech companies. The biosimilars market in industrialized countries is also likely to expand considerably in the coming years due to the expiration of patents for high-selling biopharmaceuticals and an increasing number of approved biosimilars. While such generic medications have been widely used in Europe for many years and have been able to gain significant market share in some areas, progress in the USA has been rather slow until now due to regulatory, patent law-related, and marketing hurdles. In the next few years, however, the trend toward increased usage of biosimilars is likely to accelerate.

### Biopharmaceuticals Are Gaining Importance – Growing Share of Sales in the Global Pharmaceutical Market



The biopharmaceutical industry must meet growing demand for medications while producing an increasing number of approved medications and ensuring new types of therapy. Therefore, industry observers expect that worldwide bioreactor capacities will continue to expand in the years to come. At the same time, the industry faces rising cost pressure. This increases the significance of innovations for boosting flexibility and efficiency in biopharmaceutical research and production. In the future, the biopharmaceutical market will shift away from a low number of especially high-selling medications that account for a majority of total production volume toward an expanding range of products for smaller groups of patients. Technological progress leads to ongoing improvements in the productivity of biopharmaceutical production processes. Therefore, according to the research and consulting institute BioPlan, many manufacturers will likely rely increasingly on flexibly usable single-use technologies for the commercial production of many new medications. Particularly in the case of relatively small batches, single-use technologies already ensure more cost-effective production than conventional stainless steel units and have a better environmental footprint. To master these challenges, more and more pharmaceutical companies are relying on digitalization and automation as well as innovative software solutions for controlling and optimizing their processes. A further trend is process intensification, in which several process steps, called unit operations, are interconnected, which, among other things, enables greater product quantities to be manufactured faster while achieving higher quality.

### Further Growth Expected in the Laboratory Market

Various market observers expect the market for laboratory instruments and consumables to grow by around 5% annually in the next few years and to reach a total value of around \$103 billion in 2027.

Regarding end markets, the greatest dynamics will probably continue to be generated by the pharmaceutical and biopharma industries, in particular, as a result of continuous research into and approval of new medications, the high momentum of scientific and technological innovations, and strong growth in China. For instance, EvaluatePharma expects sector-specific research spending to increase annually by 3.6% during the period from 2023 to 2028. According to market studies, the product area of bioanalytical instruments should particularly benefit from this and further grow at an above-average rate within the laboratory market. According to leading providers of laboratory instruments, demand for laboratory products in the pharmaceutical and biopharmaceutical industries is expected to expand moderately in 2024, despite the encouraging medium-term outlook. The reasons cited include restrained investment activity in the current interest rate environment, the persistently muted funding environment, especially for small and medium-sized biotech companies, and severe market weakness in China.

Budget increases for academic and public-sector research institutions should continue to act as a growth driver in some countries, while the projected slowdown in global economic growth poses risks to demand from industrial end markets. Market observers continue to expect China and India to generate the highest growth rates in the medium term. Stricter regulatory requirements in a range of industries are also stimulating increased demand for instruments used in sample analysis and quality control. In addition, investments in laboratory infrastructure are becoming more attractive, especially in China, as a result of government-supported efforts to promote innovativeness in several key industries. In previous years, this had entailed a rise in the share of global R&D spending attributable to China.

Sources: BioPlan: 20th Annual Report and Survey of Biopharmaceutical Manufacturing Capacity and Production, April 2023; Evaluate Pharma: World Preview 2023, August 2023; Alliance for Regenerative Medicine: Sector Snapshot, August 2023; citeline: Pharma R&D Annual Review 2023, May 2023; Markets and Markets: Biosimilars Market – Forecast to 2028, 2023; SDI: Global Assessment Report 2023, April 2023; [www.fda.gov](http://www.fda.gov)

## Outlook for 2024

Based on the slight recovery in demand since the end of the third quarter of 2023 and the market outlook forecast by industry observers, Sartorius expects to grow profitably in 2024 and beyond. Due to inventory optimization measures at customers that have not yet been fully completed, the company projects business momentum to increase gradually in the course of the year, resulting in a rather moderate first half of 2024. In addition, business performance could also be affected by increasing geopolitical tensions and economic slowdowns in some regions.

Against this backdrop of still somewhat unstable market trends and therefore limited visibility, management forecasts an increase in Group sales revenue in the mid to high single-digit percentage range, with a non-organic contribution accounting for around 1.5 percentage points. In terms of profitability, management anticipates the underlying EBITDA margin to rise to slightly more than 30%, compared with the prior-year figure of 28.3%. At around 13%, the ratio of capital expenditures to sales revenue is expected to be below the 2023 figure of 16.5%. Excluding possible capital measures and/or acquisitions, the ratio of net debt to underlying EBITDA is projected to be at around 4.

For the Bioprocess Solutions division, management expects a gradual continuation of the demand recovery and an increase in sales revenue in the mid to high single-digit percentage range, including a contribution of acquired businesses of around 2 percentage points. The underlying EBITDA margin is projected to be over 31%, compared with the prior-year figure of 29.2%. The above-average profitability of the Polyplus business will have a slightly positive effect on the margin development.

Business in the Lab Products & Services division depends to an extent on economic conditions and a series of indicators currently pointing to a subdued development in key economic regions. Against this backdrop and despite the observed recovery trends, management predicts a subdued sales revenue increase in the low single-digit percentage range and an underlying EBITDA margin at around the previous year's level of 25.1%.

All forecasts are based on constant currencies, as in the past years. Management points out that the industry has become increasingly dynamic and volatile in recent years. In addition, uncertainties due to the shifting geopolitical situation, such as various countries' nascent decoupling tendencies, are playing an increasing role. This results in increased uncertainty when forecasting business figures.