



CEE Economic Monthly

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► The European pharmaceutical sector has performed poorly over the past few years. Production has been sluggish across nearly all EU countries. The notable exception is Denmark, where production more than doubled compared to 2021. Across the EU, the sector has expanded by 25.5% in that period. We present the major trends in the section: *European pharmaceutical sector pressured by the US*.

► The pharmaceutical sector is predominantly dominated by the United States, but Europe also plays a crucial role, leaving little space for Asian companies. The two biggest global pharmaceutical companies, Eli Lilly (USA) and Novo Nordisk (DNK), dominate the diabetes and obesity drug market. The stock price of Novo Nordisk grew as much as fivefold from pre-pandemic levels. However, the stock values of the remaining major European companies grew only modestly during the same time period. More in section: *US and European companies dominate the global pharmaceutical market*.

► The outlays related to research and development (R&D) expenditures in the pharmaceutical industry are likely to be more moderate in the coming years. The EU devotes little public funds to research and development. Furthermore, the effectiveness of such subsidies is debatable – German companies are not the leaders in pharmaceutical innovation, despite receiving strong support. More in the section: *Pharmaceutical companies are likely to limit R&D spending*.

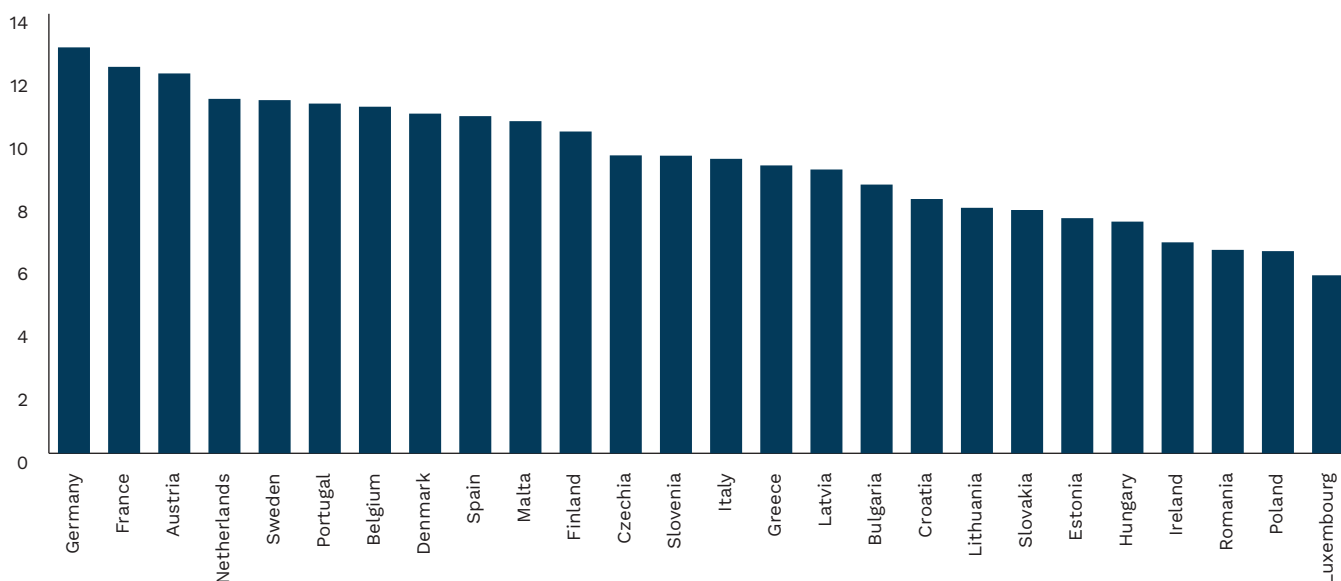
► The share of R&D spending in the pharma sector reflects a broader weakness of the CEE region. Business expenditure on research and development is significantly lower than in Western Europe, resulting in a smaller number of highly skilled jobs. We describe the data in the section: *Low business R&D expenditures are a weakness of the CEE region*.

► The biotechnology sector is expected to develop rapidly in areas such as obesity treatment and oncology. At the same time, companies face significant challenges related to patent risks, sales concentration around key products and intense market competition. We present the long-term trends in the section: *Future trends in the biotechnology sector*.

► After an intense period of pandemonium, the pharmaceutical industry is entering a phase of stabilization, facing new challenges such as the risk of patent expiration, concentrated sales and increasing competition. Read more in: *Future trends in the biotechnology sector*.

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Current Health Expenditure (%GDP)



Source: calculated by PEI based on World Bank.

European pharmaceutical sector pressured by the US

22.7%

Sales in the European pharma sector in 2023 – share of global market

35%

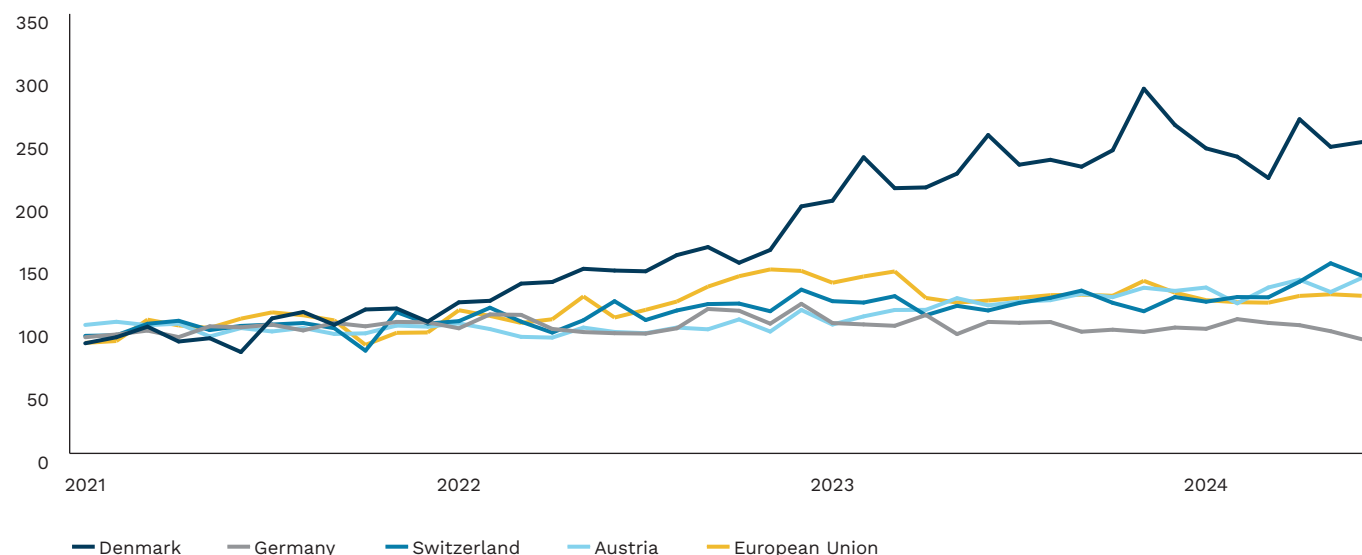
Anticipated growth rate of the pharmaceutical market in the EU till 2027

► The European pharmaceutical sector has performed poorly over the past few years. Production has been sluggish across nearly all EU countries. The notable exception is Denmark, where production more than doubled compared to 2021. Across the EU, the sector has expanded by 25.5% in that period.

► **In 2024, the pharmaceutical sector continued to struggle.** Eurostat data highlights that production in the EU during the first half of the year was stagnant, with no net growth (0%) compared to December 2023. The strongest growth was observed in the Netherlands (28%) and Czechia (8%). Poland and Switzerland also experienced modest growth at 5% and 4%, respectively. However, several countries faced significant declines, with Portugal and Belgium seeing the most substantial decreases at -20% and -19%, respectively. The most stable increase is seen in Denmark, which has more than doubled production since 2021.

► **The European pharmaceutical sector is under pressure from the United States.** According to Statista, the largest global pharmaceutical companies are based either in the U.S. or Switzerland. Moreover, the U.S. remains the largest pharmaceutical market, accounting for 53.3% of global sales in 2023, while Europe’s share was only 22.7%. However, among the global leaders by market capitalization, one EU company stands out – Denmark’s Novo Nordisk. This is the primary reason why Denmark leads Europe in terms of production growth in this sector. In June 2024, Denmark’s index, where 2021=100, reached a record 247.9, the highest in the EU.

Figure 1.1. Pharmaceutical production (2021=100, SCA)

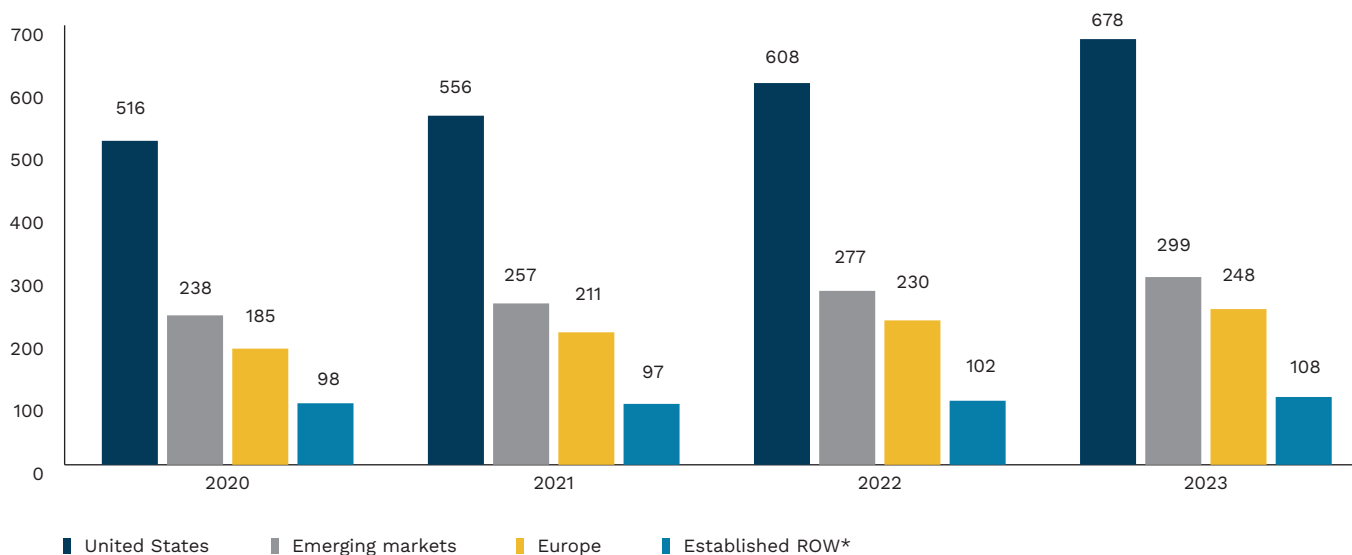


Source: calculated by PEI based on Eurostat

► **The outlook for the European pharmaceutical sector in H2 2024 presents a mixed picture.** Companies like Novo Nordisk (Denmark) and AstraZeneca (UK) are anticipating a continued revenue growth, fueled by innovations in the treatment of obesity and other chronic diseases. Statista research indicates both companies are projected to have some of the best-selling pharmaceutical

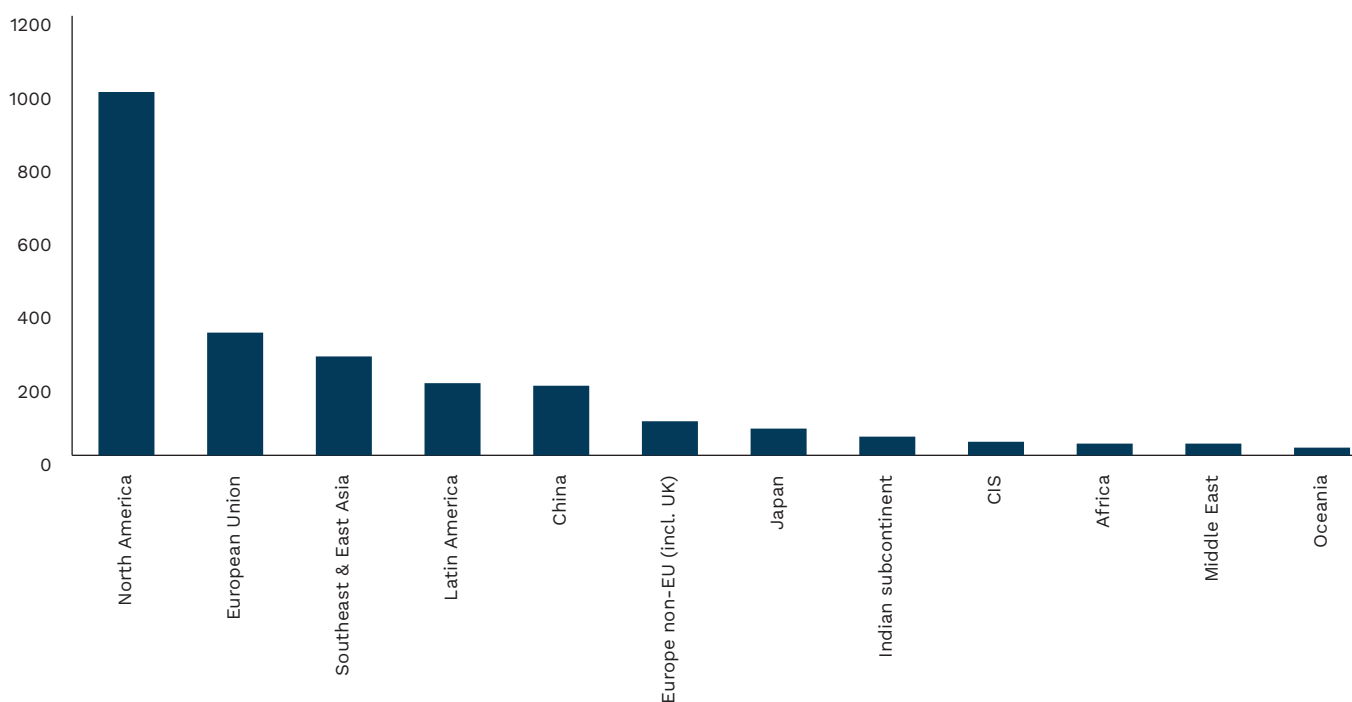
drugs worldwide by 2028, with expected sales of USD 12 bn and USD 9.4 bn, respectively. However, the sector faces significant challenges, particularly the expiration of key patents, which could substantially impact the revenues of major players such as Bayer (Germany) and Roche (Switzerland). Moreover, pricing pressures driven by regulatory changes, including the U.S. Inflation Reduction Act, are likely to add further complexities for European pharmaceutical companies.

Figure 1.2. Global pharmaceutical sales from 2020 to 2023, by region (USD bn)



Source: calculated by PEI based on [Statista](#).

Figure 1.3. World pharmaceutical sales by region forecast 2027 (USD bn)



Source: calculated by PEI based on [Statista](#).

► **Looking further ahead, the European pharmaceutical market presents a cautiously optimistic outlook**, with spending in the EU projected to reach approximately USD 375 billion by 2027, compared to USD 277 billion in 2023. This growth, driven by ongoing investments in biotechnology and innovative therapies, particularly in oncology and immunology, reflects the sector's ability to remain a critical and dynamic player in the global market, even as it navigates a complex landscape.

US and European companies dominate world's pharmaceutical market

34%

Percentage share of European companies in the total market cap of the world's top 100 pharmaceutical companies

+405%

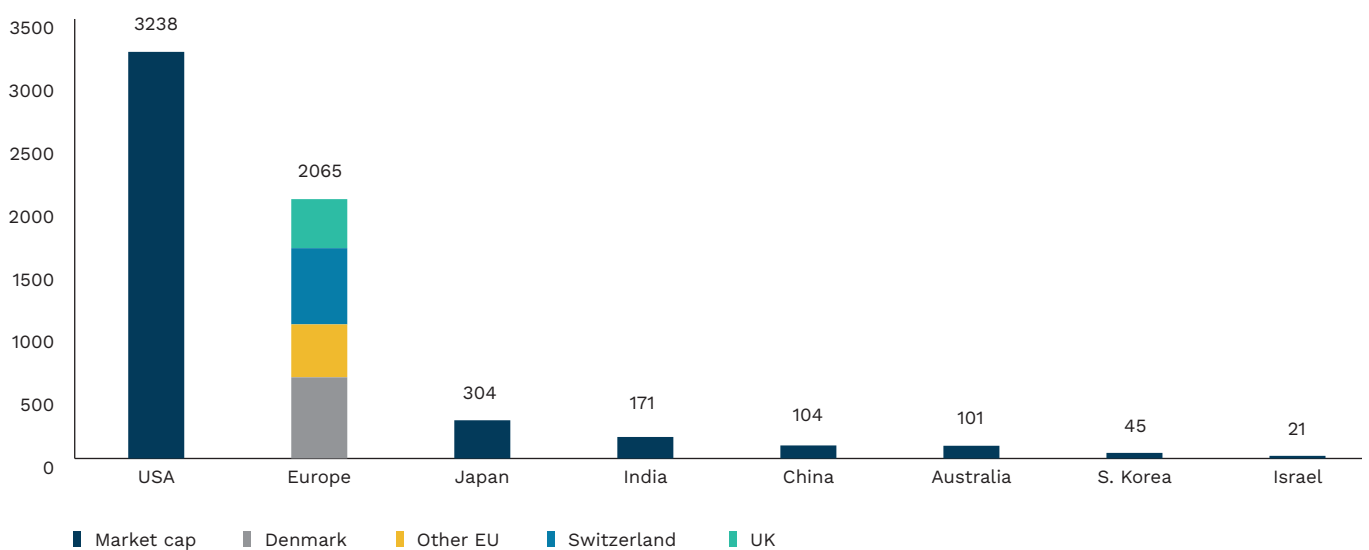
Growth in the stock price of Novo Nordisk since 2019 – the biggest European pharmaceutical company

► The pharmaceutical sector is predominantly dominated by the United States, but Europe also plays a crucial role leaving little space for Asian companies. The two biggest global pharmaceuticals companies, Eli Lilly (USA) and Novo Nordisk (DNK), dominate the diabetes and obesity drugs market. The stock price of Novo Nordisk grew as much as fivefold since pre-pandemic levels. However, the stock values of the remaining major European companies grew only modestly in the same time period.

► **The pharmaceutical sector's market capitalization is dominated by the US, but Europe also holds a significant portion.** Among the 100 world's largest pharmaceutical companies, 54% of the total market value belongs to companies based in the US, while European companies account for 34%. Half of European companies' value is attributed to entities based within the EU, mostly the Danish Novo Nordisk. The other half comes from non-EU European countries, such as Switzerland and the UK. The domination of US and Europe leaves little space for other regions such as Asia – Japan (5% of market capitalization), India (2.8%) and China (1.7%).

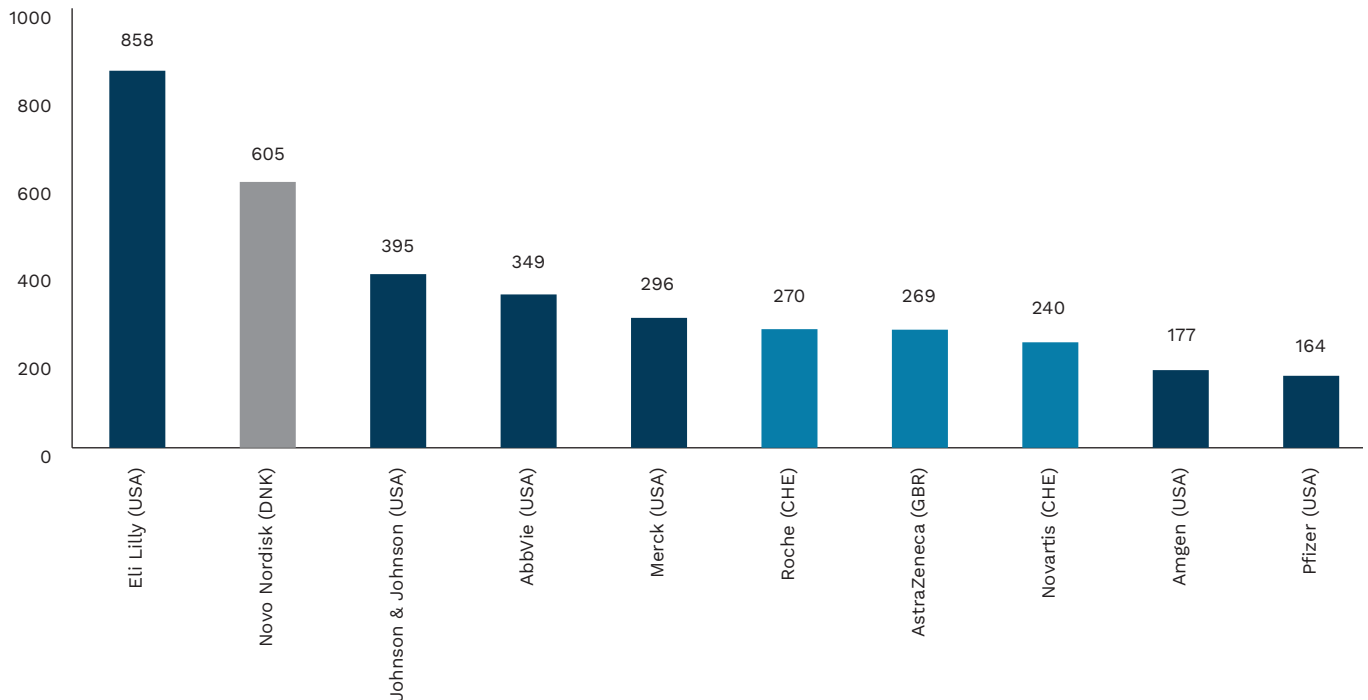
► **The two biggest global pharmaceutical companies dominate the diabetes and obesity drug market.** Both Eli Lilly (USA) and Novo Nordisk (DNK) are producers of obesity drugs. Mounjaro and Zepbound, which are produced by Eli Lilly and Ozempic and Wegovy which is produced by Novo Nordisk, became a global phenomenon. They boosted Novo's market value fivefold since 2019. Current market capitalization accounts for more than USD 600 bn which is more than whole economy of Denmark (approx. USD 410 bn in 2024). Novo Nordisk has significant influence on the country's economy. The company's growth in 2023 enabled the Danish economy to grow almost four times faster than the EU average – [Bloomberg](#) indicates that without Novo Nordisk's contribution the Danish economy would have stagnated.

Figure 2.1. Market capitalization of 100 biggest pharmaceutical companies by origin (USD bn)



Source: calculated by PEI based on companiesmarketcap.com. Data as of 26th August 2024.

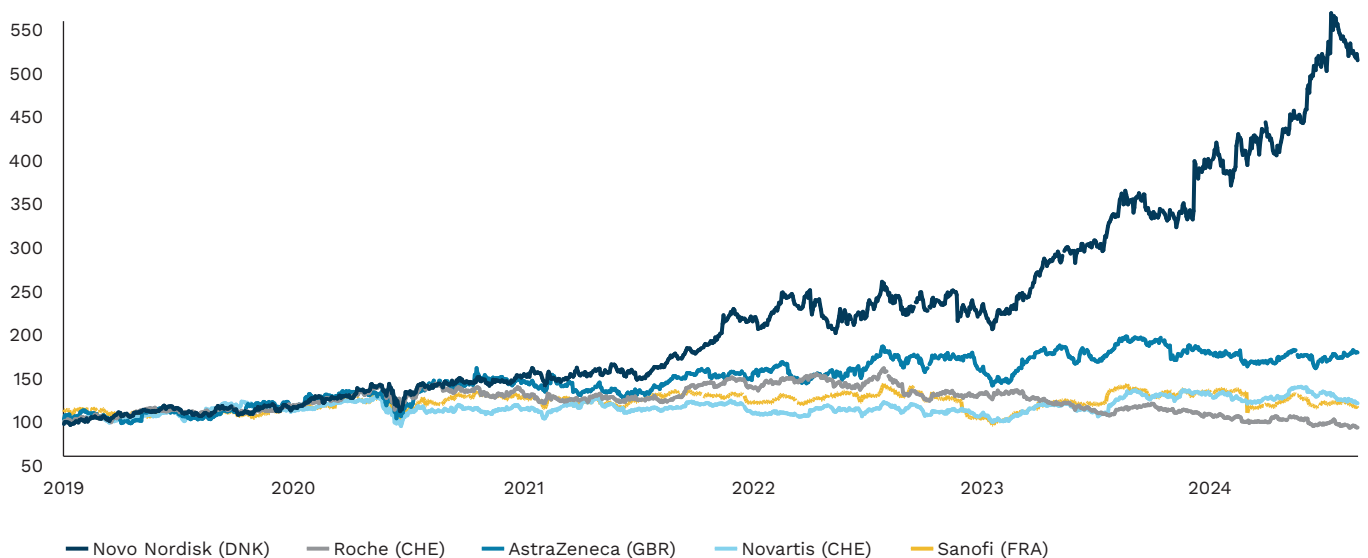
Figure 2.2. World's biggest pharmaceutical companies, market capitalization (USD bn)



Source: calculated by PEI based on [companiesmarketcap.com](https://www.companiesmarketcap.com). Data as of 26th August 2024.

► **Among the leading European-based companies, Novo Nordisk (DEN), Roche (CHE), and AstraZeneca (GBR) stand out with the highest market capitalizations.** While Novo Nordisk focuses on obesity and diabetes drugs, the product range of Roche and AstraZeneca is broader and more conventional. They focus on curing oncological, cardiovascular diseases and preventing them by focusing on immunology or vaccine production. Their market capitalization is approx. USD 270 bn, accounting for more than a quarter (27%) of the total market cap of all European companies among the 100 biggest pharmaceutical companies.

Figure 2.3. Stock values of the five biggest European pharmaceutical companies (USD, index 2019=100)



Source: calculated by PEI based on Yahoo Finance. Data as of 26th August 2024.

► **The stock values of the remaining major European companies grew modestly since the pre-pandemic levels.** Moreover, Roche stock declined to 84% of its 2019 average value. In May its P/E ratio dropped to a 5-year low, however in Q3 it returned to near the average 2022-23 level. In July Roche announced the halt of a lung cancer drug study, which resulted in the further devaluation of its stock.

Pharmaceutical companies are likely to limit R&D spending

7.3%

Growth in pharma R&D spending in 2023 estimated by Evaluate Pharma consulting

2.9%

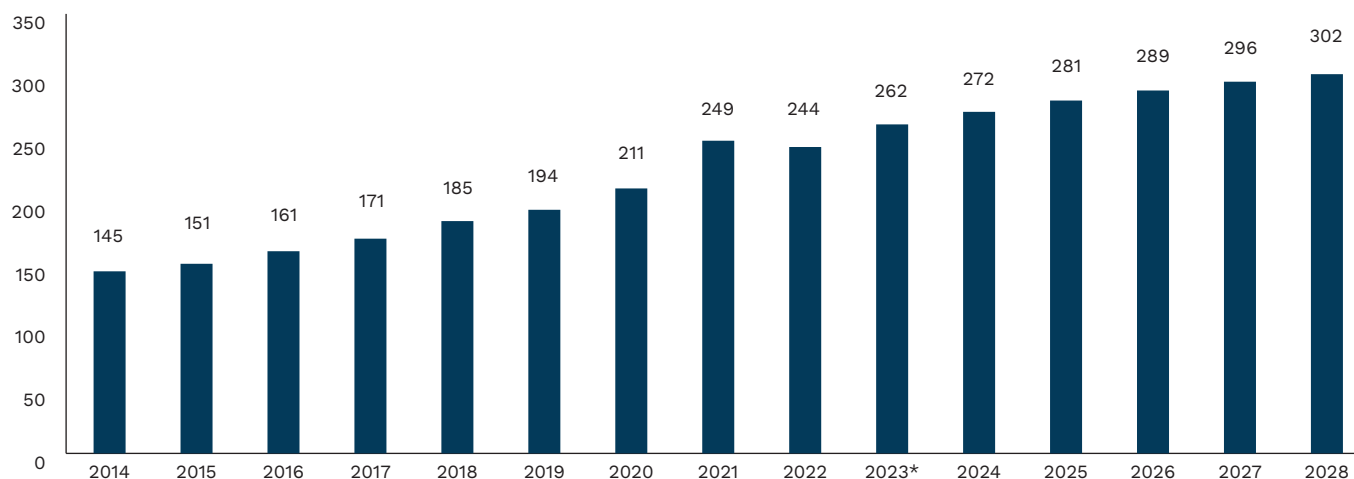
Average growth rate projected for the years 2024-2028

► The outlays related to research and development (R&D) expenditures in the pharmaceutical industry are likely to be more moderate in the coming years. In the EU a relatively small amount of public funds is devoted to research and development, with the exception of Germany. Furthermore, the effectiveness of those subsidies is debatable – German companies are not the leaders in pharmaceutical innovation.

► **The growth in R&D expenditures in the pharmaceutical industry is likely to slow down after the pandemic.** Evaluate Pharma suggests expenditure growth rates in the industry should oscillate around 3-4%, Statista Market Research projects growth of around 5%. The biggest increase is expected to be seen in a few advanced economies – in line with an increase in revenues and profits. Revenues of German pharma companies are expected to achieve a compounded annual growth rate (CAGR) of 6% till 2028. Statista predicts similar performance for countries like the UK and the US (6.1% and 5.3%, respectively).

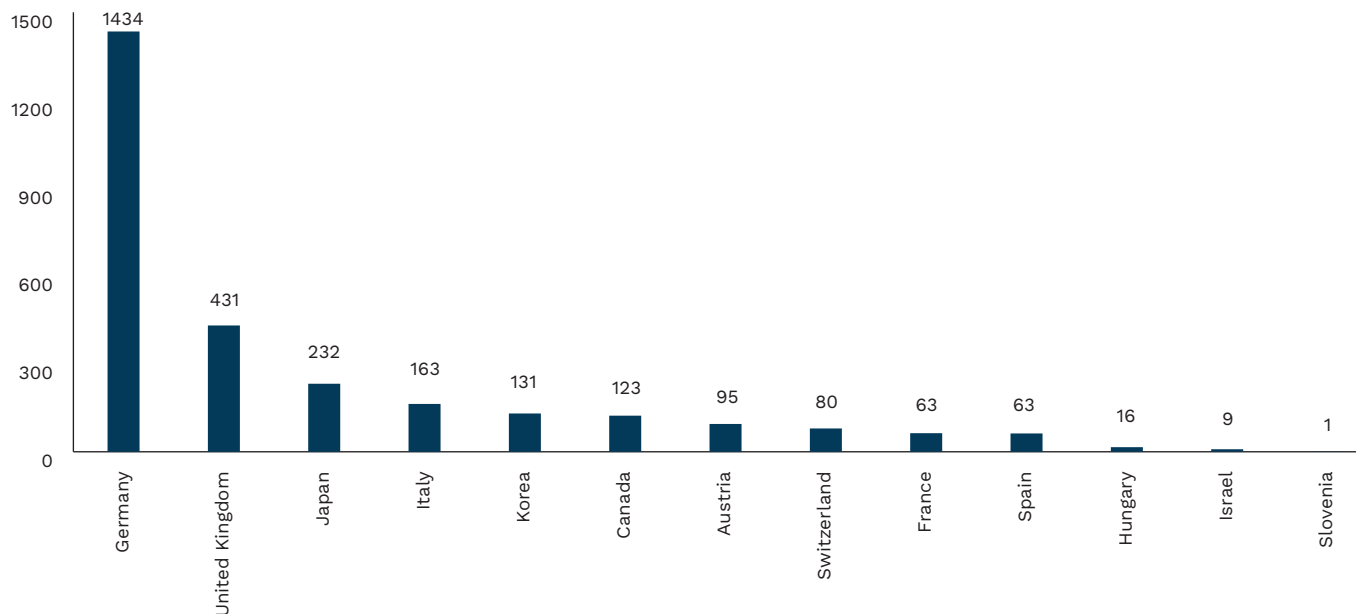
► **Despite the risk of concentration, national governments within the EU are not taking substantial steps to sustain high levels of pharma R&D spending.** In a non-pandemic condition only, Germany was actively subsidizing its pharmaceutical R&D sector. In contrast, other EU nations have shown limited engagement in providing subsidies. In the majority of advanced economies grants for the pharma sector account for approximately 1%-2% of total R&D expenditure. Meanwhile, in Germany, the share was significantly higher at 20%, and in the United Kingdom, it reached an impressive 49%.

Figure 3.1. Global R&D spending in the pharmaceutical sector (USD bn)



Source: calculated by PEI based on [Statista](#).

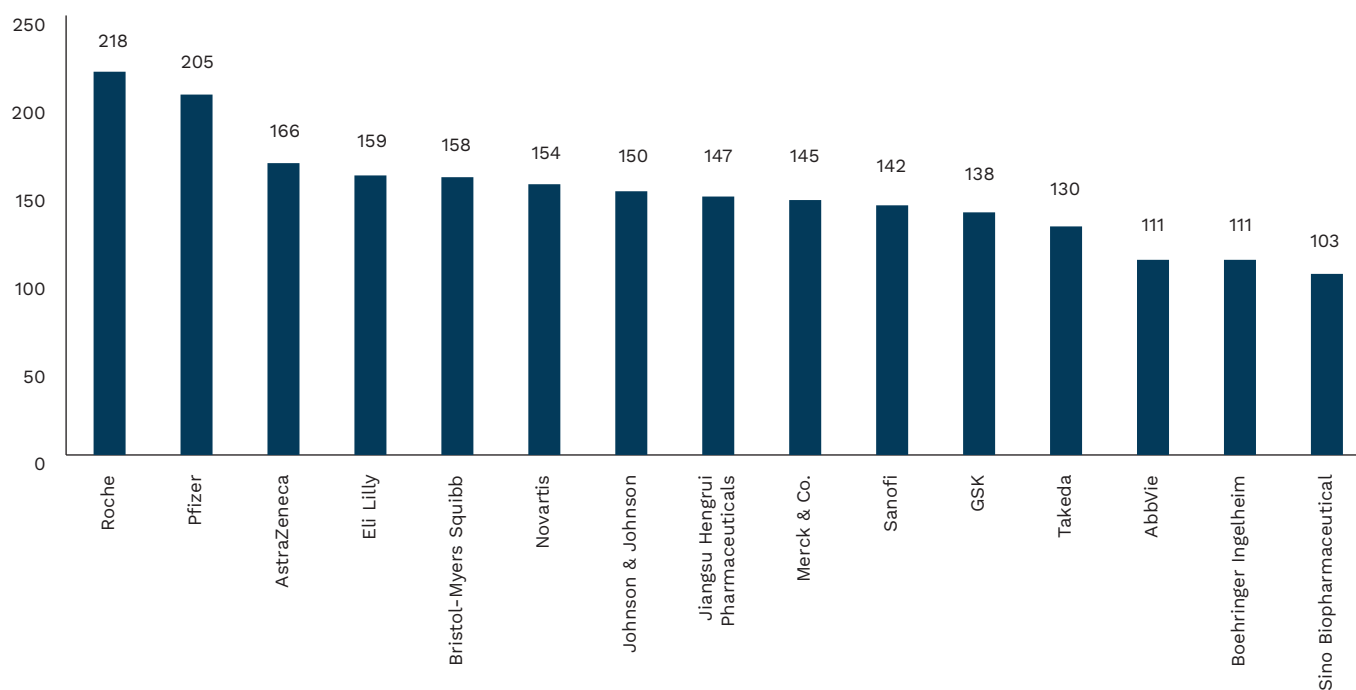
Figure 3.2. Direct R&D subsidies (USD mln (PPP) in 2019)



Source: calculated by PEI based on [OECD](#).

► **Government support, however, is not the sole determinant of R&D expenditure.** Major pharmaceutical companies, regardless of their location, tend to allocate similar levels of resources towards research. For example, in 2023, leading companies like Pfizer (US), Roche (Switzerland), and AstraZeneca (UK) reported similar numbers of R&D projects of 218, 205 and 166, respectively. The German companies were not on the list of top 15 pharma companies with the largest number of the research projects.

Figure 3.3. Leading 15 pharmaceutical companies worldwide by number of R&D projects in 2024



Source: calculated by PEI based on [Statista](#).

Low business R&D expenditures are a weakness of the CEE region

1.5%

Median R&D spending in the CEE region in 2022 (%GDP)

1.0%

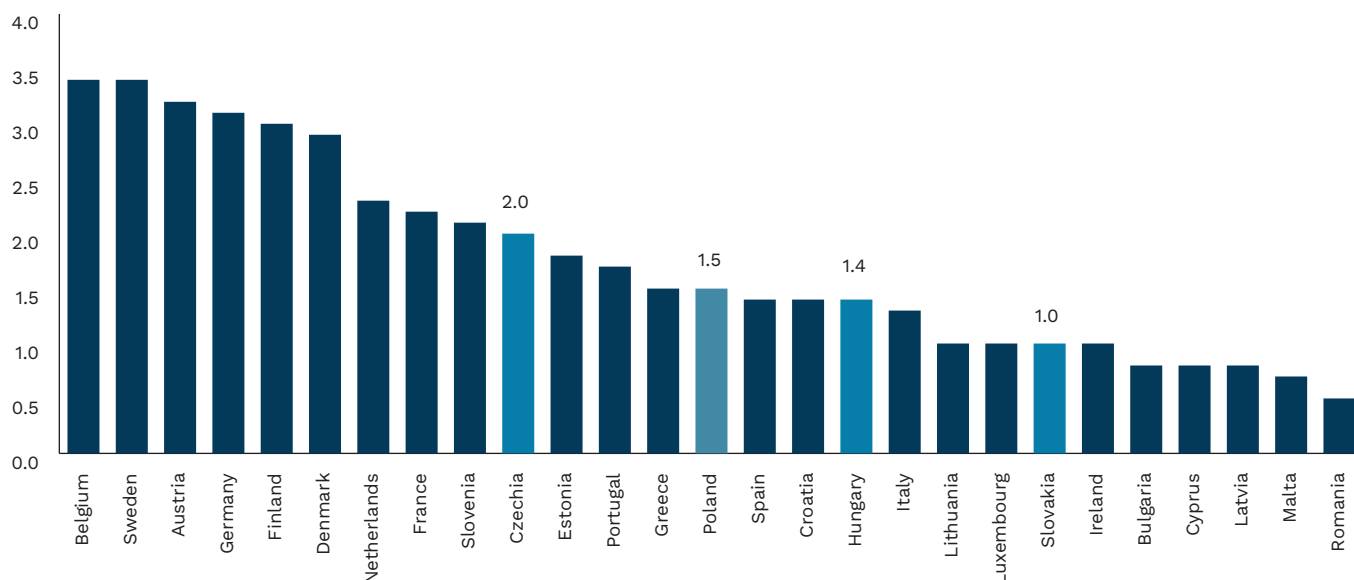
Median business expenditure in the CEE region in 2022 (%GDP)

► The share of R&D spending in the pharma sector reflects a broader weakness of the CEE region. Business expenditure on research and development is significantly lower than in Western Europe, which results in a smaller number of highly skilled jobs.

► **CEE countries continue to lag Western Europe in terms of R&D spending.** Among them, only Czechia stands out with a relatively high investment level of 2% of GDP. Poland showed some progress, reaching 1.5% of GDP in 2022, followed by Hungary at 1.4% and Slovakia at 1%. However, these figures remain modest compared to Western European benchmarks. Germany leads the continent with R&D investment of 3.1% of GDP, while France maintains a stable 2.2%. The CEE region is gradually catching up with Spain, where R&D expenditure has stabilized at around 1.4% of GDP.

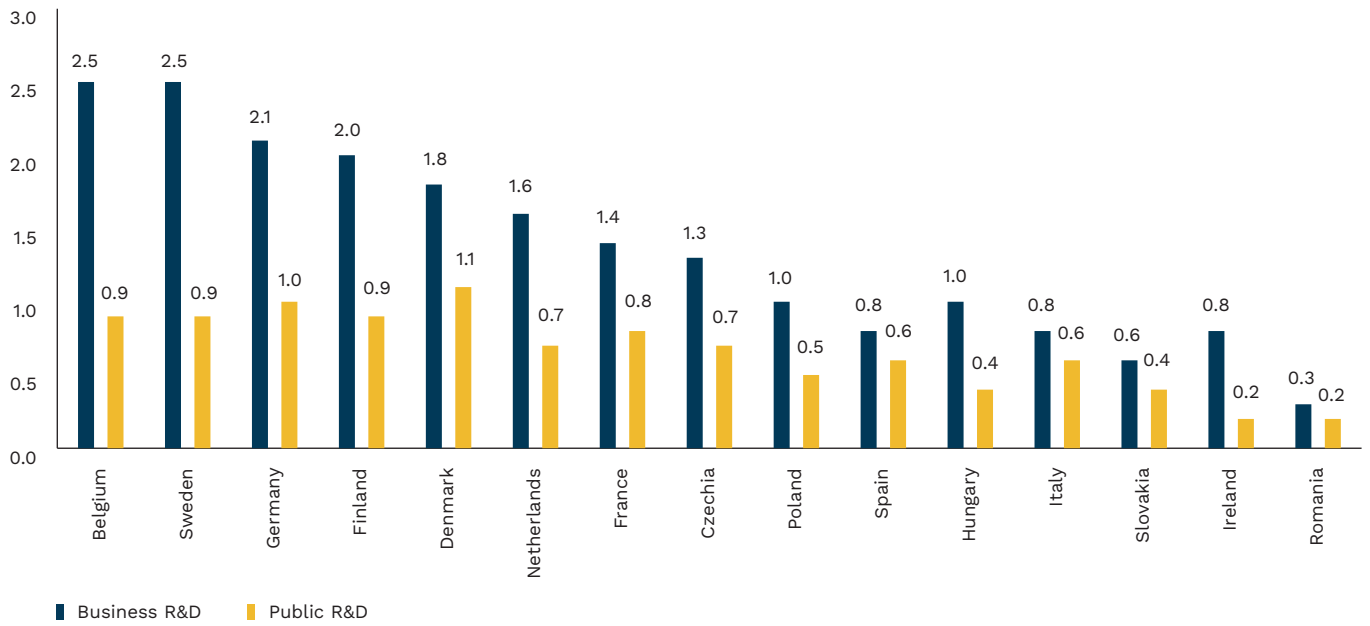
► **The most significant disparities are observed in private sector R&D spending,** although public expenditures in the CEE countries are also comparatively lower. In Scandinavian countries, as well as in Belgium and Germany, private sector R&D investments reach around 2% of GDP, while in France, they stand at 1.4%. In contrast, only the Czech Republic approaches similar levels within the CEE region, with private sector R&D spending at 1.3% of GDP. Other CEE economies, such as Slovakia, Poland, and Hungary, report lower figures, with business investments ranging from 0.8% in Slovakia to 1% in both Poland and Hungary. Public R&D spending in these countries also falls slightly below the EU median of 0.6% of GDP, with Poland at 0.5% and Hungary and Slovakia at 0.4%.

Figure 4.1. R&D expenditure in 2022 by country (%GDP)



Source: calculated by PEI based on Eurostat.

Figure 4.2. R&D expenditure in 2022 by sector (%GDP)

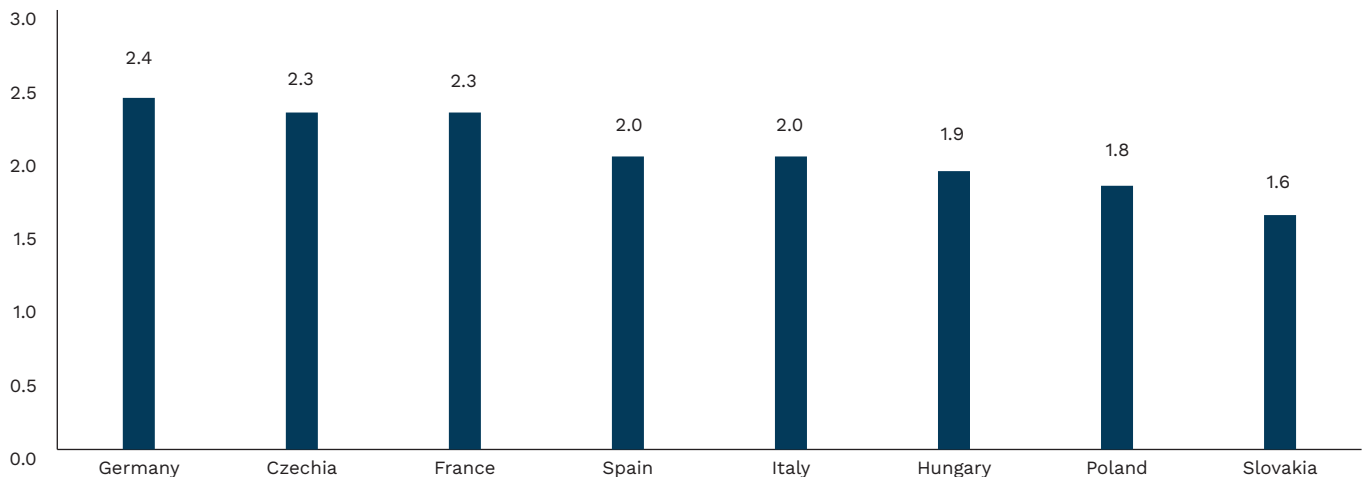


Source: calculated by PEI based on Eurostat.

► **Lower spending on R&D results in weaker employment in high-tech sectors across the region.**

In Germany, R&D personnel constitute 2.4% of the total workforce, closely followed by France at 2.3%, and Italy and Spain at 2%. The Czech Republic aligns with these leaders, also reporting 2.3% of its workforce engaged in R&D roles. However, other CEE countries show weaker performance, with R&D personnel making up only 1.8% of the workforce in Poland, 1.9% in Hungary, and 1.6% in Slovakia. Despite these disparities, it's noteworthy that CEE countries are catching up at varying paces. Poland has seen a robust growth in research positions, averaging a 9% increase since 2014, while Hungary and Slovakia have experienced more modest growth rates of 4.1% and 3%, respectively.

Figure 4.3. R&D staff as a percentage of total employment



Source: calculated by PEI based on Eurostat.

Future trends in the biotechnology sector

- ▶ After an intense period of pandemics that brought both enormous challenges and substantial profits, the pharmaceutical industry is entering a phase of stabilization while also facing new challenges for the future. The biotechnology sector continues to grow rapidly, offering tremendous growth potential, especially in areas such as obesity and cancer treatments. However, companies face significant challenges, including the risk of patent expirations, concentration of sales around key products and intensifying market competition.
- ▶ The obesity drug market is expected to grow tremendously over the next few years, projected to reach USD 93 bn by 2030. Global sales of obesity drugs, dominated by Eli Lilly and Novo Nordisk, could grow as much as 15 times by 2023, with Eli Lilly and Novo Nordisk expected to lead the market with shares of 40% and 47%, respectively. At the same time, new effective drugs are emerging that could play a key role in the fight against the global obesity problem. One example is Eli Lilly's Retatrutide, which shows promising results in phase 2 clinical trials, not only in weight loss, but also in improving comorbidities such as fatty liver. New drugs such as Viking's VK2735 and Roche's CT388 may also soon gain traction, although their development is at an earlier stage.
- ▶ [The IQVIA Institute for Human Data Science](#) indicates that global spending on cancer treatment had risen to USD 223 bn by 2023. Nearly three-quarters of this spending took place in the United States, Europe, the United Kingdom and Japan. In comparison, the value of cardiovascular drugs sales was about USD 144 bn. The market will continue to grow due to the aging of the population, among other factors. In its report, IQVIA noted that more than 2,000 oncology trials were launched in 2023. Twenty-five new active substances were introduced globally during the year, bringing the total to 193 implemented since 2014.
- ▶ For many companies in the industry, the expiration of patent protection remains a challenge. The standard period of patent protection is 20 years from the date the patent application is filed. Once the patent expires, other pharmaceutical companies can legally produce and sell drug equivalents, known as generics. These drugs are much cheaper because their manufacturers do not have to bear the costs associated with research and development of a new drug. EY estimates indicate that the top 20 biopharmaceutical companies have USD 180 bn. in sales at risk due to expiring patents by 2028. In response to these challenges, many companies are stepping up efforts to develop and license new technologies to fill gaps in their portfolios to compensate for the potential loss of market exclusivity.
- ▶ [The World Preview Report Evaluate](#) indicates that global total prescription drug sales will have exceeded USD 1.7 tr. by 2030, an increase of 7.7%. Indications are that in addition to obesity drugs, the growing importance of drugs used to treat immunological and oncological diseases will also be an important element by 2030.

The Polish Economic Institute

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