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- World spending on health: global data and individual nations
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Summary 2/2

- **The evolution of the pharmaceutical market**
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The health, pharmaceutical and life sciences markets

- The contribution to growth of the pharmaceutical segment stands out in a health market that is expected to grow at a rate of +1.9% between now and 2025, reaching more than 8,000 billion Euro in spending worldwide. After the +7.9% rate recorded in 2021 (1.113 billion Euro in value, with 78.3 billion Euro in vaccines alone) this segment will continue to increase by +3.9% per year, well above pre-pandemic forecasts.
- The three-year 2022-2025 outlook is excellent for all the other life sciences segments - which include Nutraceuticals (functional food and beverages), Cosmeceuticals, Biotech and Biomedicals - innovative and dynamic niches that, together, will weigh in at 1.98 billion Euro in 2025, with average annual growth rates close to double digits.
- While the economic recovery and the end of the healthcare emergency have increased volumes and prices in the pharmaceutical sector, some longer-term factors will continue to slow down: in Europe and the USA, public healthcare systems and private insurance are pushing prices downward and squeezing growth; globally, the proportion of (cheaper) generics over branded drugs is steadily increasing and, in parallel, the expiry of many patents in the coming years will reduce pharmaceutical companies' revenues.



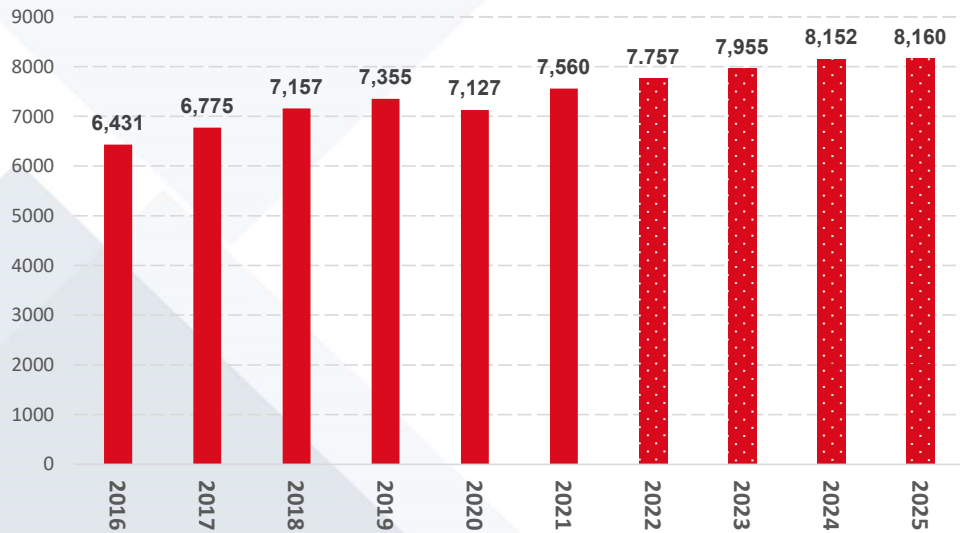
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Healthcare Spending

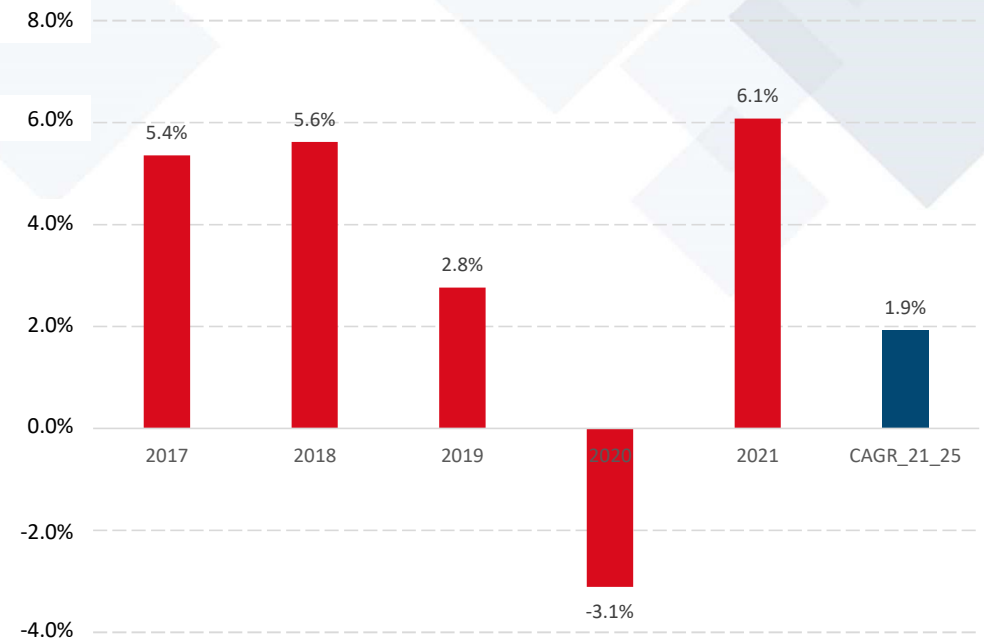


Worldwide healthcare spending

(in billion Euro)



Annual % variation

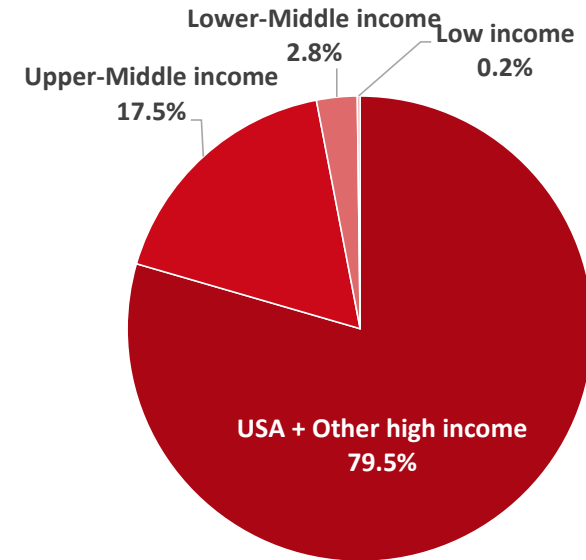


At the aggregate level, global healthcare spending now totals more than 7,560 billion Euro. After a marked contraction between 2019 and 2020, spending will begin to grow again at an average annual rate of 1.9% over the next four years, reaching 8,160 billion Euro in 2025.

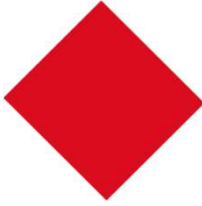
Historical Data on Healthcare Spending

Billion Euro

Country	2016	2017	2018	2019	2020	CAGR 16/20	Growth 16/20
United States	2747.0	2857.4	2992.4	3126.5	3056.5	2.7%	44.3%
China	486.6	542.6	624.7	664.7	685.3	8.9%	28.5%
Japan	464.0	457.1	471.0	481.3	472.8	0.5%	1.3%
Germany	338.9	362.9	396.0	395.7	391.4	3.7%	7.5%
France	246.6	255.2	271.5	262.5	253.0	0.6%	0.9%
United Kingdom	233.9	230.3	249.9	254.3	243.8	1.0%	1.4%
Canada	146.5	155.5	162.2	164.4	155.2	1.5%	1.2%
Italy	142.4	147.7	157.8	151.5	142.4	0.0%	0.0%
Brazil	143.2	170.0	157.8	156.7	120.6	-4.2%	-3.3%
Korea, Rep.	90.2	100.4	113.2	117.3	116.3	6.6%	3.7%
Australia	97.1	107.0	113.8	120.0	114.5	4.2%	2.5%
Spain	96.0	102.0	111.1	110.7	101.8	1.5%	0.8%
The Netherlands	70.2	73.2	79.7	80.2	80.5	3.5%	1.5%
Switzerland	68.4	70.4	72.8	71.9	73.9	2.0%	0.8%
Russian Federation	58.8	73.4	77.2	82.9	72.9	5.5%	2.0%
India	70.0	67.7	69.4	75.3	69.8	-0.1%	0.0%
Sweden	48.7	50.8	52.9	50.5	51.2	1.3%	0.4%
Mexico	52.1	55.0	57.2	60.0	50.8	-0.7%	-0.2%
Belgium	44.6	47.0	50.9	49.6	48.4	2.1%	0.5%
Austria	35.6	37.6	40.8	40.4	39.3	2.5%	0.5%
Saudi Arabia	32.7	37.5	39.3	39.2	34.6	1.4%	0.3%
Poland	26.9	30.0	32.3	33.5	33.5	5.6%	0.9%
Norway	34.0	35.8	38.1	37.1	33.2	-0.6%	-0.1%
Argentina	43.7	58.5	44.1	37.4	32.2	-7.3%	-1.6%
Denmark	27.6	29.0	31.3	30.1	30.8	2.8%	0.5%
Turkey	32.4	31.2	27.9	28.8	27.2	-4.3%	-0.7%
Indonesia	24.5	25.7	26.0	28.3	26.7	2.2%	0.3%
South Africa	24.8	28.9	31.2	30.7	26.6	1.7%	0.3%
Israel	19.9	22.5	24.5	25.8	26.4	7.3%	0.9%
Ireland	19.3	20.6	23.0	23.2	24.7	6.4%	0.8%

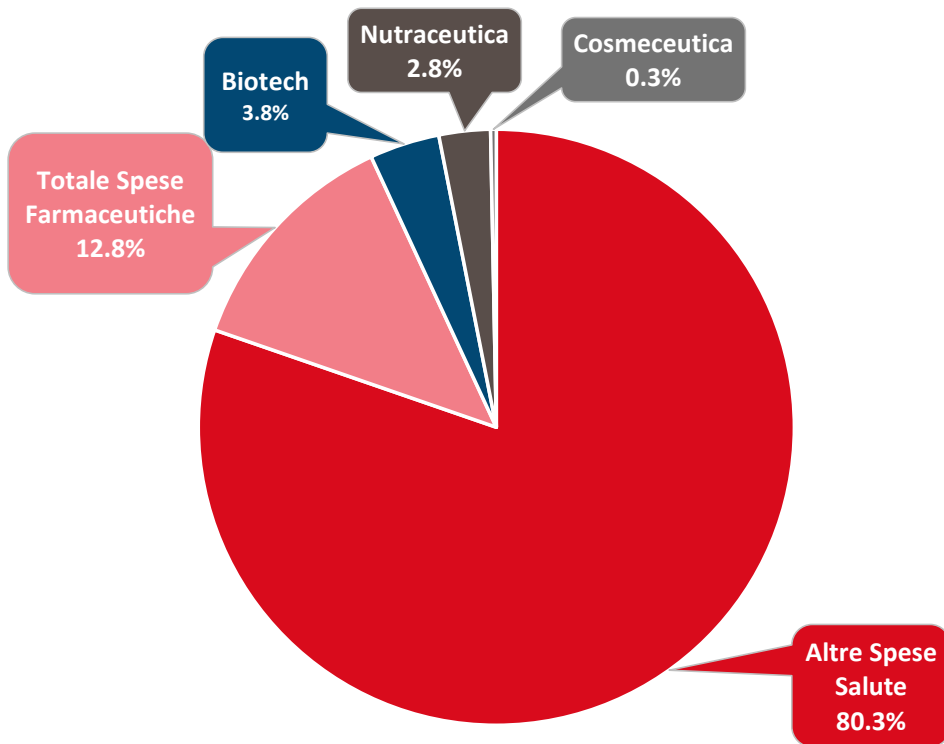


High-income nations are the primary drivers of global health spending, accounting for nearly **80%** of total volumes. At the other end of the spectrum, low-income nations account for only 0.2% of global spending. At the individual country level, **the United States, China and Japan** are responsible for more than two-thirds of world health spending (the United States alone accounts for 49% of health spending worldwide). In the 2016-2020 period, the **highest growth rates** in health spending were recorded by **China** (CAGR +8.9%), **South Korea** (+6.6%) and - with significantly lower volumes - **Vietnam** (+11.3%) and **Romania** (+11%). The worst performing countries are Iran (CAGR -21.4%), Argentina (-7.3%), Turkey (-4.3%) and Brazil (-4.2%).



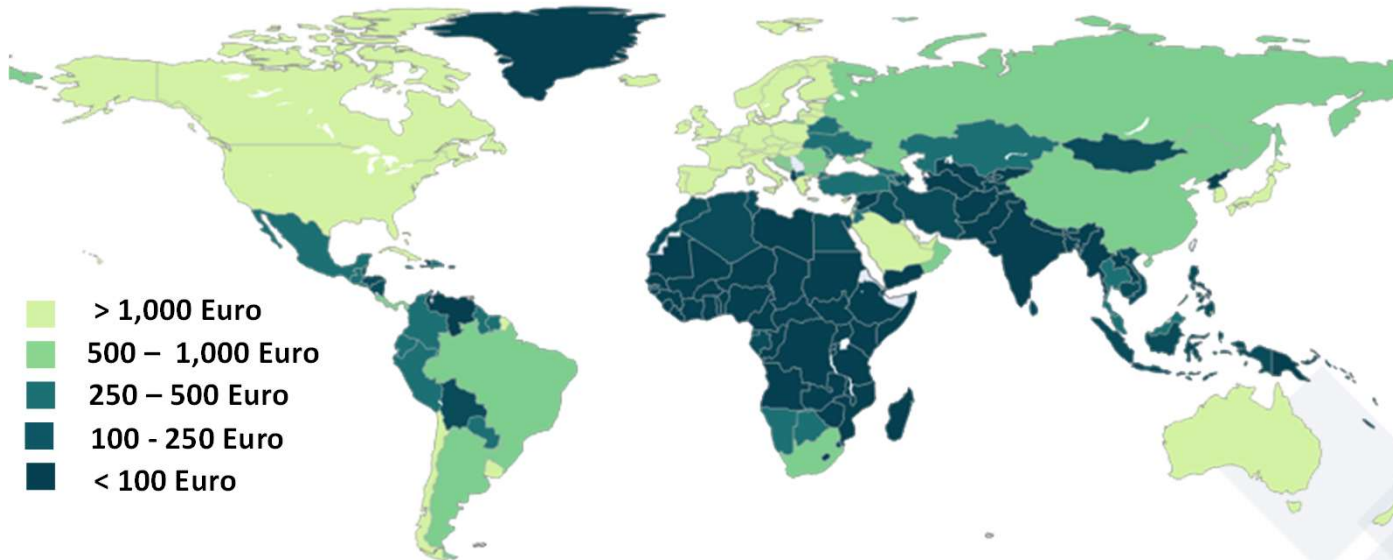
Healthcare spending worldwide

% shares of the various components (pharmaceutical, nutraceutical, cosmeceutical, etc.)



The most consistent item of the macro-aggregate “health expenditure” is related to the “other expenses” entry, that is, public and private health expenses, such as hospital assistance and emergency room expenses, expenses for medical and specialist visits, expenses for laboratory diagnostics and instrumental examinations, thermal treatments. This category accounts for more than 80% of the total, followed by pharmaceutical, biotech, nutraceutical and cosmeceutical spending. These latter entries have been on the rise in recent years.

Health expenditure per capita



The map makes it possible to sharply underscore the disparity in per-capita health spending between different areas of the planet. **Only high-income countries can afford to spend more than 1,000 Euro per capita** (led by the USA with over 9,000 Euro per person), while in low-income countries - Africa and Southeast Asia above all - spending is less than 100 Euro per capita.



Population trends

1. Top ten by population 2020

TOTAL POPULATION	2020	2025	CAGR 20/25
China	1,424	1,438	0.2%
India	1,383	1,451	1.0%
United States of America	331	343	0.7%
Indonesia	272	284	0.9%
Brazil	213	220	0.6%
Pakistan	208	226	1.7%
Nigeria	206	233	2.5%
Bangladesh	169	178	1.0%
Russian Federation	143	142	-0.2%
Mexico	133	141	1.1%
Other Countries	3,313	3,529	1.3%
World	7,795	8,185	1.0%

Mln people

2. Top ten for CAGR 20/25

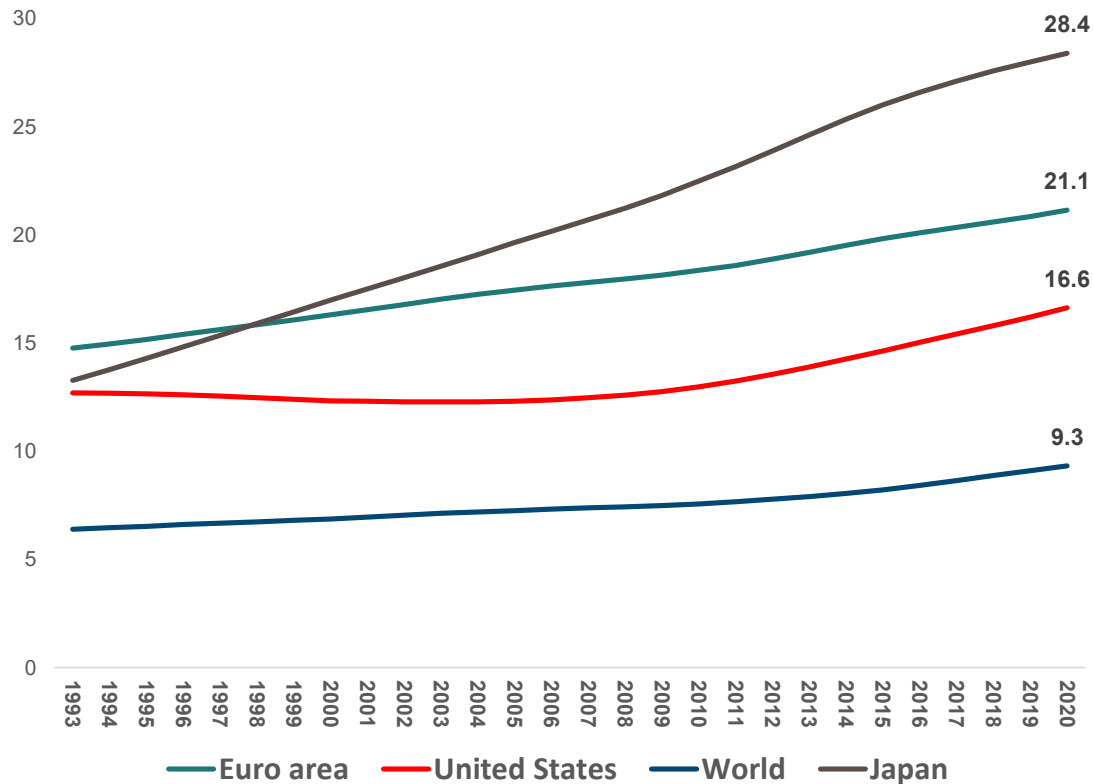
TOTAL POPULATION	2020	2025	CAGR 20/25
Syrian Arab Republic	18	23	4.3%
Niger	24	29	3.8%
Angola	32	38	3.2%
Uganda	47	55	3.1%
Democratic Rep.of the Congo	89	104	3.1%
Equatorial Guinea	1.4	1.6	3.1%
Somalia	16	18	3.0%
Tanzania	62	72	3.0%
Mali	20	23	3.0%
Burundi	11	13	3.0%

Mln people

Population ageing in developed countries

(Share of population over 65 in total)

Growing global demand for drugs: Ageing of population in OECD countries



In Japan, nearly one-third of the population is over 65. This share falls to just over 20% in the Eurozone, while in the USA it reaches 16.6% of the total. In developing countries, the percentage of the population over 65 is much lower, so much so that the overall figure worldwide is less than 10%.

The progressive **ageing of the population in advanced countries** counterbalances, at least in part, the maturity (and consequent low growth) of the demand for *patent* pharmaceutical products, progressively replaced by generic products. The growth in demand for *patent* medicines, on the contrary, is more vigorous in developing countries and in those of recent industrialisation, although the share of generic drugs on the total is, on average, higher in these countries. In particular, it is evident that the passage of developing countries into the stage of first industrialisation leads health spending, including pharmaceutical spending, to increasing by more than proportionally.





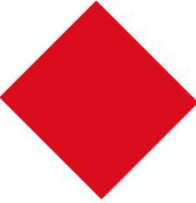
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Pharmaceutical spending



General Trends

- Pharmaceutical spending grew modestly in **2020** , primarily due to the generic and OTC components, after continuous and much more vibrant growth in the previous five years. In particular, in the first year of the pandemic, **there was an increase in the number of OTC drugs and some prescription drugs**, particularly those for chronic conditions. The growth of the latter has been facilitated by digital prescriptions. In general, the resilience of sales in the first year of the pandemic emergency occurred mainly in countries where they are associated with a high prevalence of telephone and online prescriptions.
- In contrast, **global pharmaceutical consumption in 2021 showed a significant acceleration**. The 2021 growth was **+7.9%**, reaching **1,113 billion Euro** (+ 78.3 billion Euro from vaccines alone; on average, other-than vaccine drugs are also growing, but at a slower pace).
- Looking, instead, at the trajectories of the next few years, in the longer term, growth is expected to once again being driven by conflicting trends.
- As it pertains to **sales drivers**:
 1. trend towards drug customisation and availability of large databases on patients and diseases (big data) that will allow a better segmentation and penetration of sales by population and geographical categories
 2. acceleration of R&D of new drugs, also thanks to new Artificial Intelligence technologies
 3. increasing possibility of outsourcing (CMO, CDMO, CRO) with a consequent reduction of the costs and an increased productive capacity
 4. ageing of the population and increase in the dissemination of drugs in developing and emerging countries, due to the increase in per capita income



Restraining factors

- The following **restraining factors will slow revenue growth**:
 1. increase in the share of generic and biosimilar drugs, with a consequent reduction in sales prices
 2. expiry of patents
 3. other pressures on revenues: public health spending, insurance, purchasing centers, PBS (Pharmaceutical Benefits Scheme) and online pharmacy networks; this will be a particularly heavy factor in Europe and the US, where public health systems and insurance will continue to force prices down or at least compress their growth

Globally, **the proportion of generics to branded drugs is growing steadily and** exceeds 20% by value of the total in almost all Western countries. To this trend, we add diminished revenue from the expiry of so many patents over the next few years.

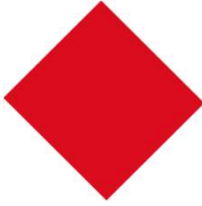
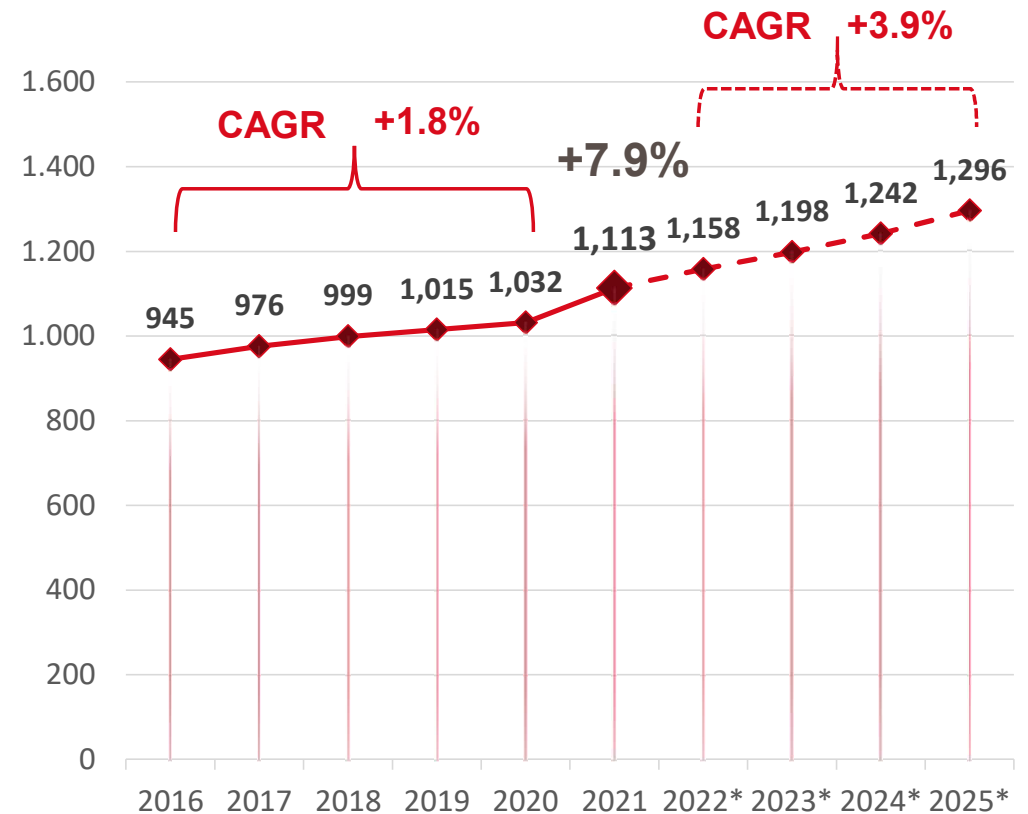
Narrowing the focus to the European Union, generics have come to represent 67% by volume and 29% by value of the pharmaceutical market in 2020. To date, three out of four equivalent drugs sold worldwide are manufactured in Europe.

Growing R&D expenditures also play an important role in squeezing the industry's profitability. Although recently counterbalanced by direct investments in low cost countries where big Pharma has moved its laboratories, spending for R&D and the development of new molecules (discovery, pre-approval testing, post-approval testing and drug safety regulations) tend to compress industrial margins.

Pharma & life science will double their growth rate

- Within healthcare spending, **pharmaceutical spending** (consisting of local production and import of drugs), after a modest growth in 2020 due to Covid-19, increased to **1,113 billion Euro in 2021** (+7.9%, with an additional contribution of 78.3 billion Euro for vaccines alone).
- Looking at the medium-term dynamics, we can see that after the slow growth in the five-year period 2016-2020 (CAGR +1.9%), **Pharma sales will increase** in the next four years at twice the rate, amounting to an average annual growth rate of **+3.9%**.
- The pharmaceutical market is the main component of the broader **life sciences** aggregate, whose other segments weigh less in absolute value but will grow at even higher rates (CAGR 2021-2024):

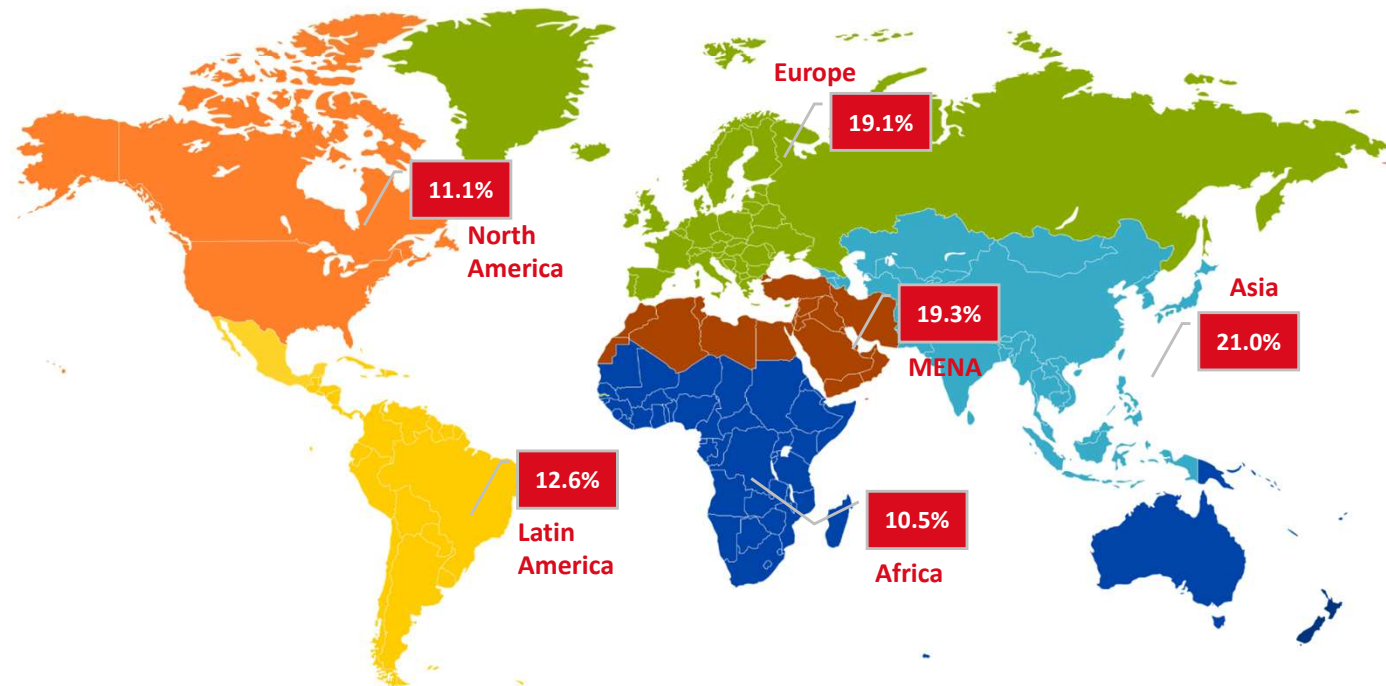
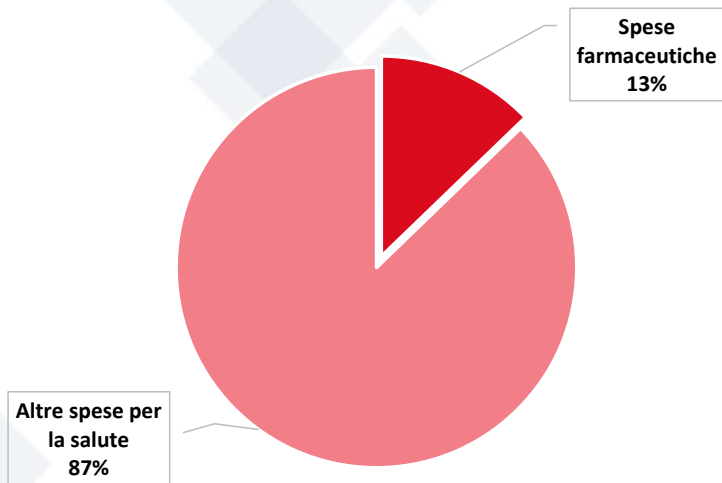
- **+8.8%** **Biotech** (326 bln Euro)
- **+7.5%** **Biomedical** (293.4 bln Euro)
- **+9.7%** **Nutraceuticals** (245.5 bln Euro)
- **+10.2%** **Cosmeceutical** (26.7 bln Euro)



Incidence of pharmaceutical spending on health care spending

Macro areas

World

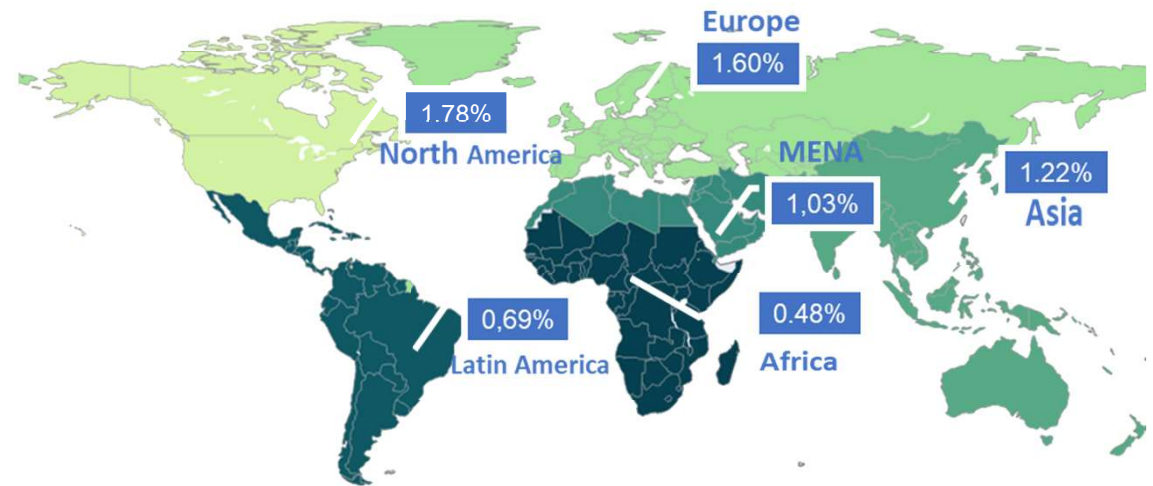
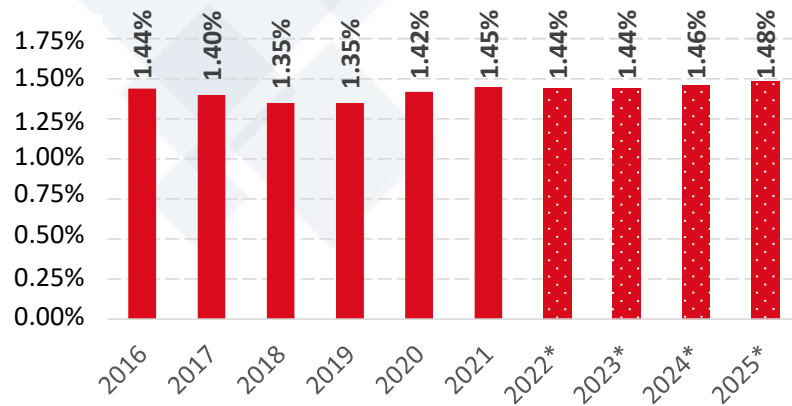


At the aggregate level, **pharmaceutical spending amounts to 13% of total global health spending.**

This percentage varies greatly when calculated by geographical macro-areas: only 10.5% and 11.1% for Africa and North America, 12.6% for Latin America, and with shares of over **19% for Europe, Middle East and Asia.**

Incidence of pharmaceutical spending on the total GDP

Global and macro areas (2016-2025)



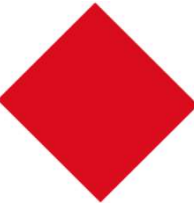
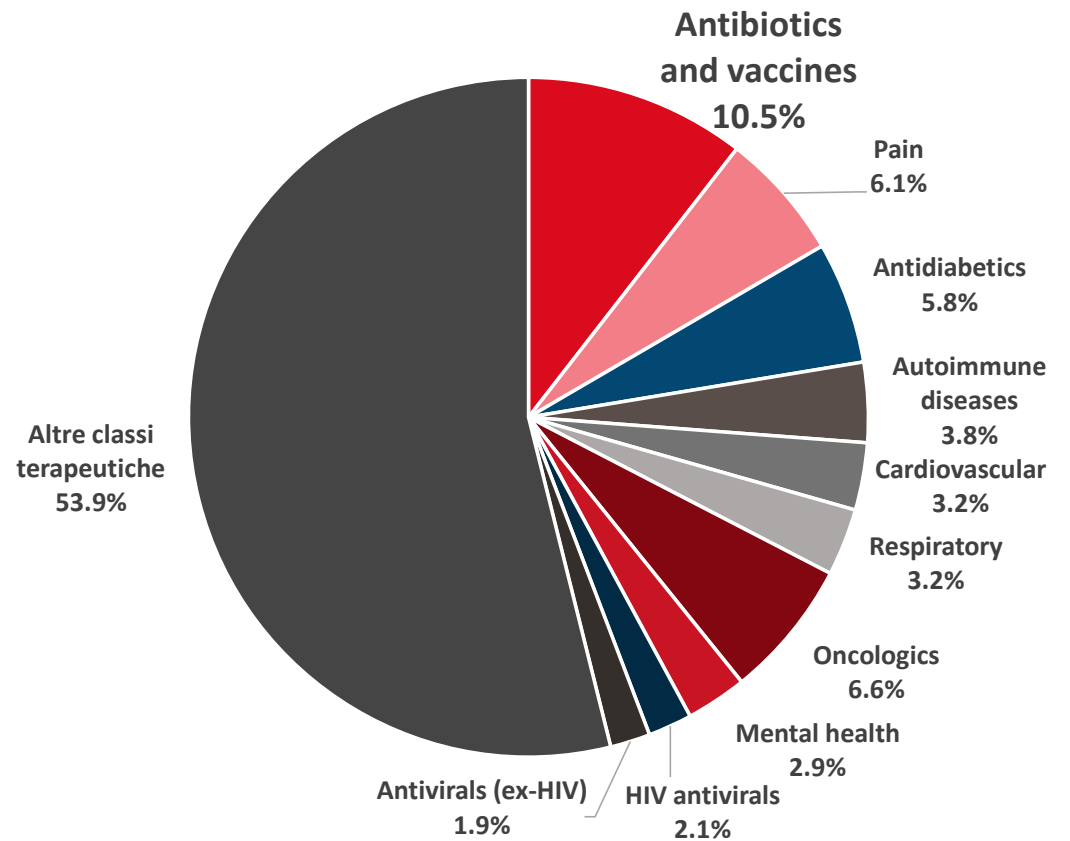
Historically, pharmaceutical spending (within healthcare spending) has tended to grow faster than GDP in more developed countries (older population, better and more expensive pharmaceutical treatments, etc.). This is confirmed also at the macro area level: **the richest areas show a higher incidence of pharmaceutical expenditure on the GDP.**

However, on a global level, forecasts for the near future foresee almost constant shares of pharmaceutical spending in the global GDP.

Segmentations of pharmaceutical spending

Global sales of drugs by therapeutic class (in bln Euro and in %)

Therapeutic class	bln Euro
Antibiotics and vaccines	116.9
Pain management	67.9
Diabetes	64.6
Autoimmune diseases	42.3
Cardiovascular diseases	35.6
Respiratory disease	35.6
Cancer treatment	73.5
Mental health	32.3
HIV antivirals	23.4
Antivirals (other than HIV)	21.1
Other therapeutic classes	599.9



Pharmaceutical spending and GDP

The projected alignment of pharmaceutical spending on the GDP over the next several years is related to several factors:

1. Lower prices (growth of generics and biosimilars; much R&D is decentralised to countries where costs are lower);
2. In addition, emerging countries with lower drug consumption are weighing more and more in the global GDP. The overall average stabilisation of the pharmaceutical spending to GDP ratio (in contrast to the predictions of Wagner's law, which would assume this ratio to increase) is essentially due to the substantial balance between the growth of health spending and the three factors already outlined above:
 - ✓ **growth** of pharmaceutical spending on **generics and biosimilars**;
 - ✓ trend towards **reduced public pharmaceutical healthcare spending** (especially in Europe);
 - ✓ increase in the share of the world GDP of countries with lower pharmaceutical spending.

However, it should be noted that the predictions of Wagner's Law continue to hold true in individual countries: **health spending grows as a share of the GDP as per capita income increases** (i.e., it grows more than GDP as the resident population increases the level of its per capita income).

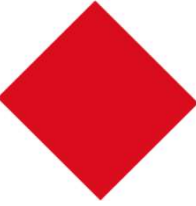
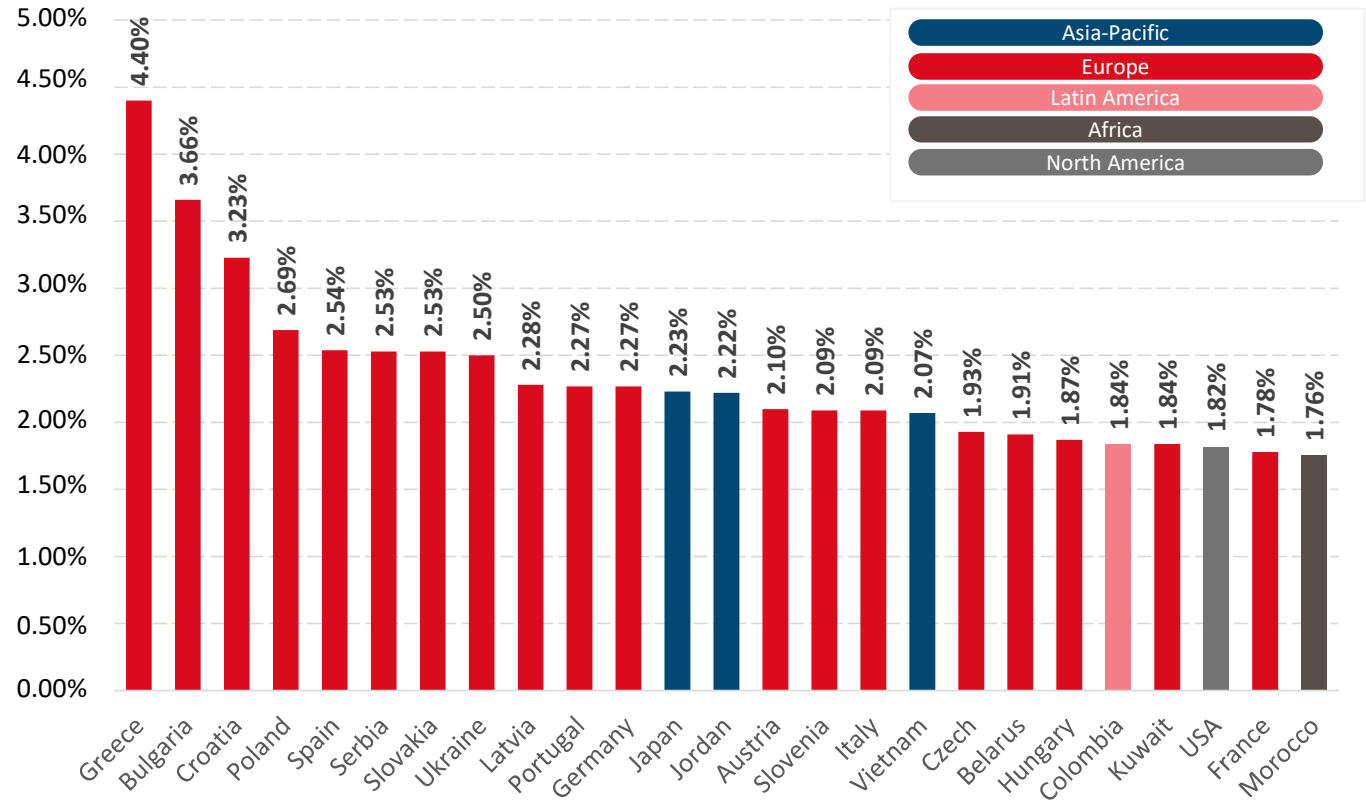
Incidence of pharmaceutical spending on the total GDP

Main markets

The countries that show the **highest shares of pharmaceutical expenditure on the total GDP** are mainly located in **Europe** (with peaks of 4.4% in Greece and 1.8% in France).

Also worthy of note is the incidence of pharmaceutical spending on the total GDP in Japan (2.23%) and the United States (1.82%).

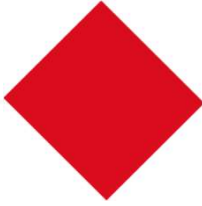
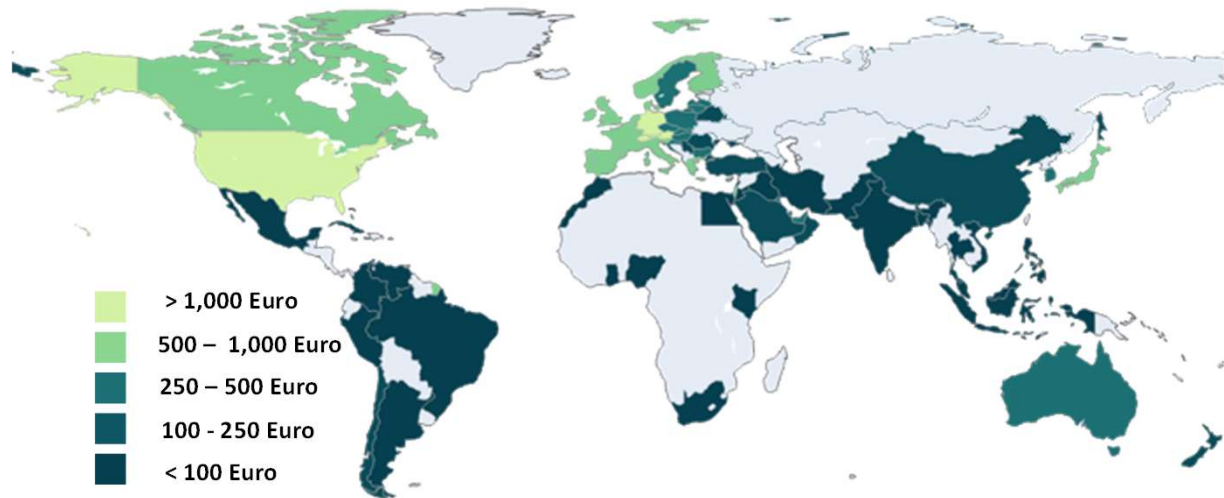
Italy, on the other hand, registers a share of pharmaceutical spending in the total GDP of 2.09%.



Per capita pharmaceutical spending (in Euro)

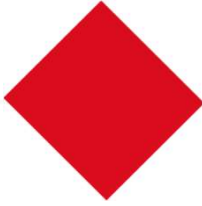
The map shows how the most economically developed countries (Europe and North America) have a per capita pharmaceutical spending greater than 500 Euro, with **peaks in the United States and Germany, whose citizens spend on average more than 1,000 Euro per person.**

Apart from a few exceptions (Eastern European countries and Australia, which fall into a per capita spending class of between 250-500 Euro), all other countries in the world have a per capita spending on average of less than 250 Euro.



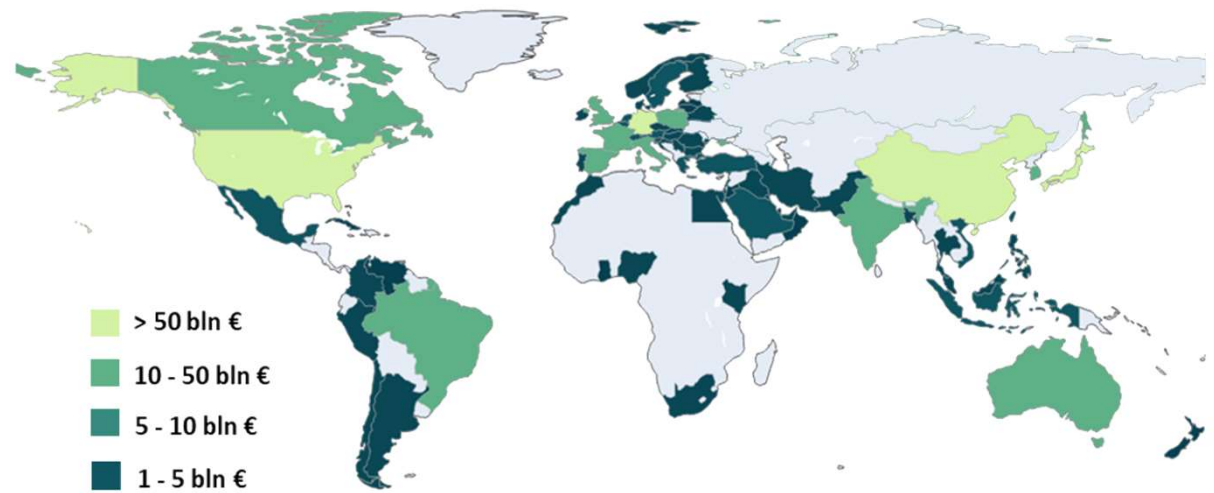
Pharmaceutical spending

Size of main markets (in bln Euro)



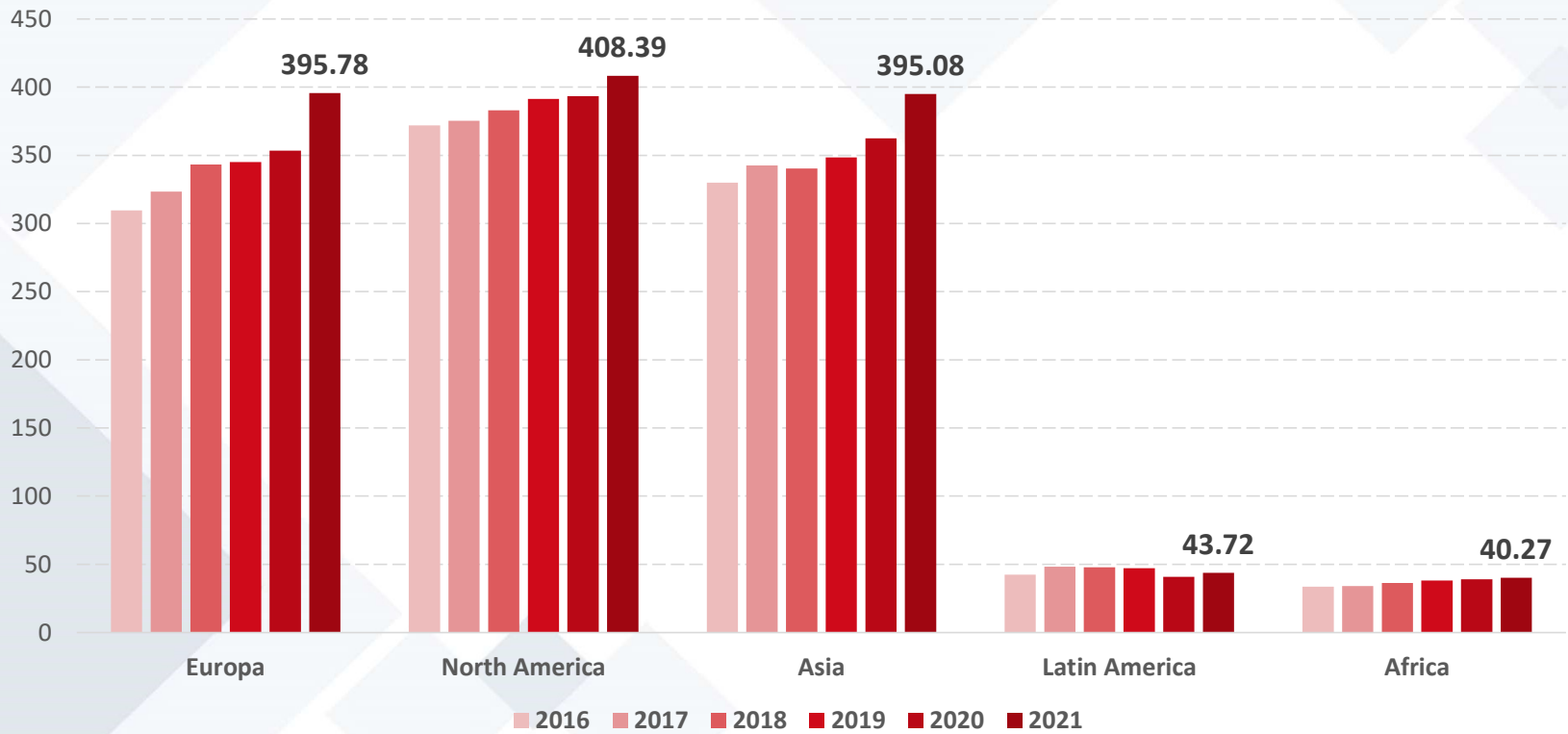
However, looking at the absolute size of spending in each country, the **U.S., China, Japan and Germany** are the largest pharmaceutical markets in the world.

The other European nations range in size from 10 to 50 billion along with Brazil, Canada, India and Australia, while all other countries have a market size of less than 10 billion Euro.



Pharmaceutical spending

Macro areas (in bln Euro)



Historical data on pharmaceutical spending

(in mln Euro)

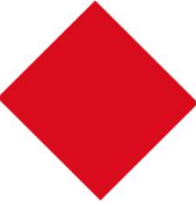
Top 30

Country	2016	2020	2021	2025	CAGR 21/25
United States	351,730	370,280	382,250	432,920	3.16%
China	155,210	154,730	169,790	189,140	2.73%
Japan	95,650	108,070	112,860	125,030	2.59%
Germany	62,110	76,000	87,330	104,940	4.70%
United Kingdom	40,130	42,460	46,560	57,520	5.43%
France	39,510	42,100	46,780	49,080	1.21%
India	20,700	29,030	32,320	46,100	9.28%
Italy	32,510	34,760	39,430	41,600	1.35%
Spain	24,420	28,520	32,570	37,660	3.70%
Canada	20,350	23,300	26,140	31,260	4.57%
Russian Federation	16,550	19,510	21,440	26,670	5.61%
Brazil	20,200	18,100	19,300	26,330	8.07%
Korea, Rep.	16,200	19,010	22,080	23,350	1.41%
Poland	10,500	14,250	16,020	22,570	8.95%
Australia	11,110	11,860	12,770	15,160	4.38%
Turkey	9,710	8,060	8,960	14,180	12.16%
Indonesia	7,180	7,580	8,830	12,890	9.92%
Switzerland	8,030	9,910	10,670	11,630	2.18%
Mexico	9,880	9,950	10,730	11,250	1.19%
The Netherlands	6,880	8,120	9,200	10,370	3.04%
Austria	6,900	8,050	9,100	10,290	3.12%
Saudi Arabia	7,050	7,530	7,980	9,940	5.64%
Greece	6,000	7,370	8,300	9,110	2.36%
Vietnam	3,980	5,110	5,610	7,510	7.56%
Belgium	4,820	5,700	6,200	6,820	2.41%
Czech Republic	3,250	4,220	4,740	6,120	6.60%
Israel	2,870	4,290	4,960	6,000	4.87%
Colombia	4,030	4,500	5,000	5,990	4.62%
Romania	3,370	3,660	4,030	5,890	9.95%
Sweden	4,930	5,020	5,030	5,710	3.22%

Country	2016	2020	2021	2025	CAGR 21/25
Bangladesh	2.470	3.480	3.940	5.470	8.55%
Portugal	4.040	4.600	5.190	5.450	1.23%
Ukraine	2.300	3.820	3.890	5.420	8.65%
South Africa	3.190	3.800	3.990	4.850	5.00%
Chile	1.790	2.470	3.050	4.760	11.77%
Philippines	2.290	3.350	3.800	4.660	5.23%
United Arab Emirates	2.620	3.510	3.710	4.650	5.81%
Denmark	3.280	3.730	4.190	4.540	2.03%
Finland	3.390	3.730	4.190	4.540	2.03%
Thailand	3.120	3.430	3.750	4.520	4.78%
Norway	2.950	3.170	3.260	4.420	7.91%
Pakistan	2.860	3.260	3.560	4.420	5.56%
Argentina	4.750	3.910	3.490	4.280	5.23%
Nigeria	1.250	2.950	3.160	4.240	7.63%
Ireland	2.780	3.050	3.420	3.760	2.40%
Egypt, Arab Rep.	3.550	2.860	3.010	3.740	5.58%
Hungary	2.550	2.650	2.920	3.610	5.45%
Malaysia	1.720	2.290	2.570	3.470	7.80%
Iran, Islamic Rep.	2.550	2.960	3.270	3.380	0.83%
Bulgaria	1.700	2.330	2.560	3.110	4.99%
Slovak Republic	1.910	2.330	2.660	3.080	3.73%
Morocco	1.430	1.950	2.020	2.480	5.26%
Croatia	1.190	1.580	1.850	2.390	6.61%
Peru	1.180	1.530	1.610	2.270	8.97%
Hong Kong SAR, China	1.140	1.610	1.730	2.170	5.83%
Kuwait	1.570	1.990	1.950	2.140	2.35%
Serbia	970	1.230	1.350	1.790	7.31%
Iraq	1.700	1.690	1.460	1.740	4.48%
New Zealand	770	950	1.060	1.460	8.33%
Singapore	840	1.000	1.080	1.380	6.32%
Belarus	910	1.140	1.150	1.350	4.09%
Kenya	1.090	1.040	1.020	1.330	6.86%
Slovenia	800	980	1.120	1.300	3.80%
Jordan	910	940	970	1.140	4.12%
Lithuania	880	780	900	1.030	3.43%
Latvia	520	670	770	920	4.55%
Qatar	610	740	770	890	3.69%
Oman	710	520	550	710	6.59%
Bahrain	390	500	540	680	5.93%
Cuba	590	500	540	680	5.93%

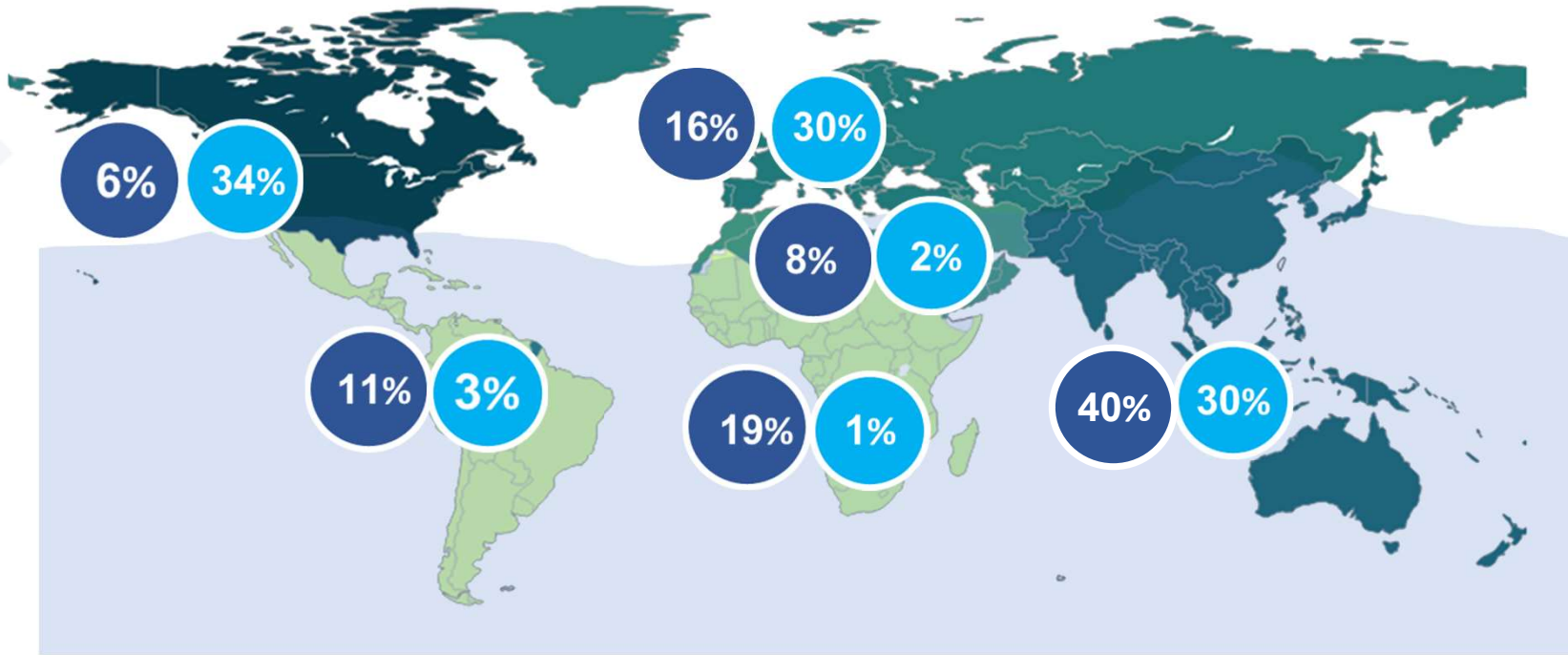
Geographical distribution of pharmaceutical spending

Share % Macro areas



Drug consumption in North America and Europe is higher than their respective share of the population. The opposite is true for all other areas. Specifically, **64% of pharmaceutical spending is implemented by 22% of the population**: Europe and North America.

The remaining 5.2 billion individuals are left with only one third of the total pharmaceutical spending: at the same time, this means that the availability of drugs has an uneven distribution, but also that non-Western markets have great potential for growth.



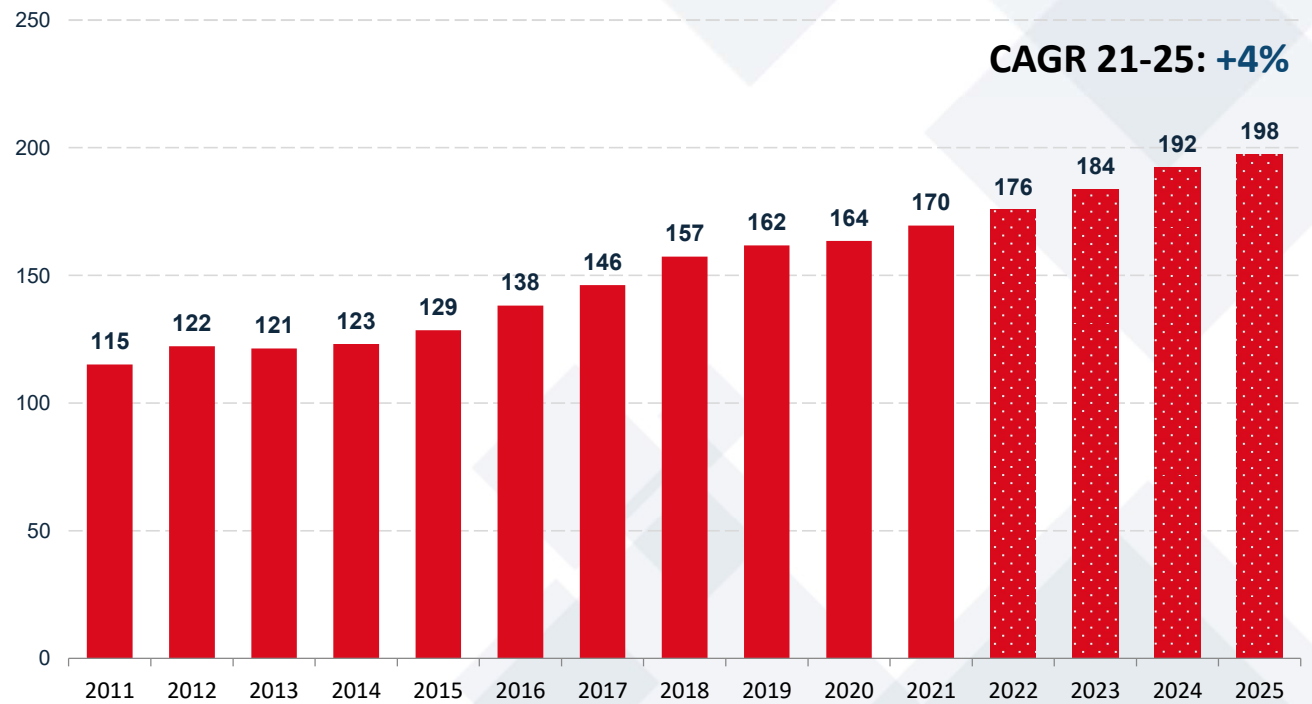
● % of total population

● % of pharmaceutical spending

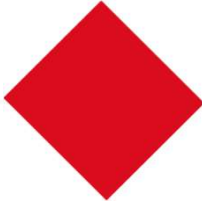
High and increasing R&D spending

Global spending in Pharmaceutical Research and Development from 2011 to 2025 (in bln Euro)

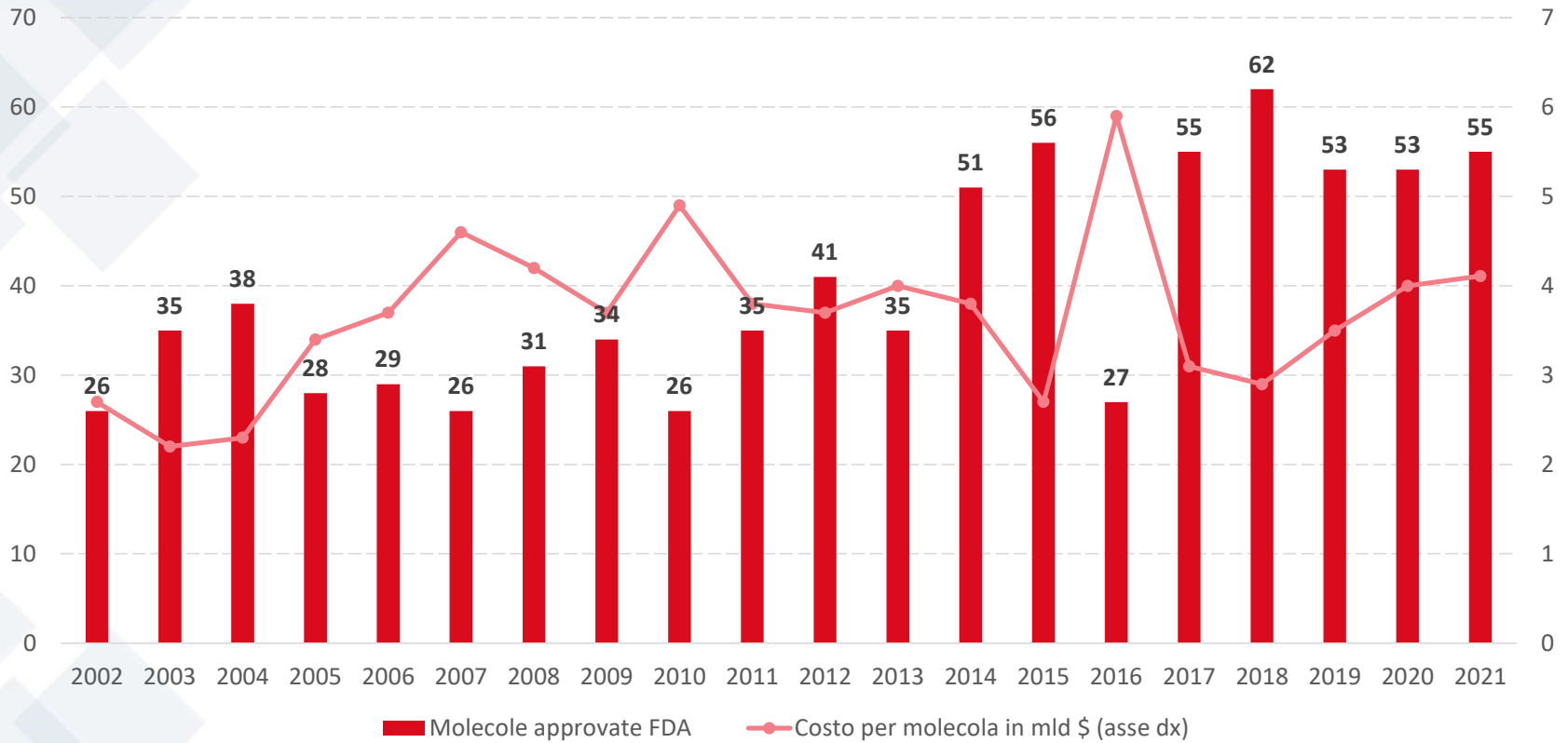
Spending on research and development of new drug molecules and therapies will grow at an even faster pace than pharmaceutical spending itself, rising from 170 billion Euro today globally to **nearly 200 billion Euro in 2025**, an average annual rate of increase of 4%. **Costs for the development of new molecules** have risen sharply over the last ten years; in fact, they have **doubled** since 2010 (graph on the following page) and this dynamic is expected to become more pronounced in the future



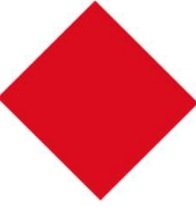
Growing spending for new molecule development



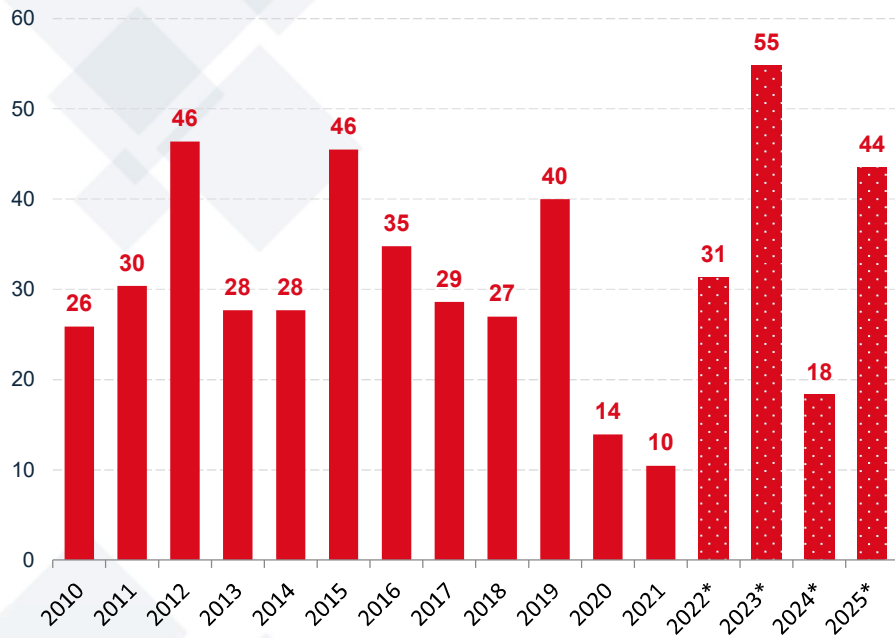
Average cost of developing a new molecule



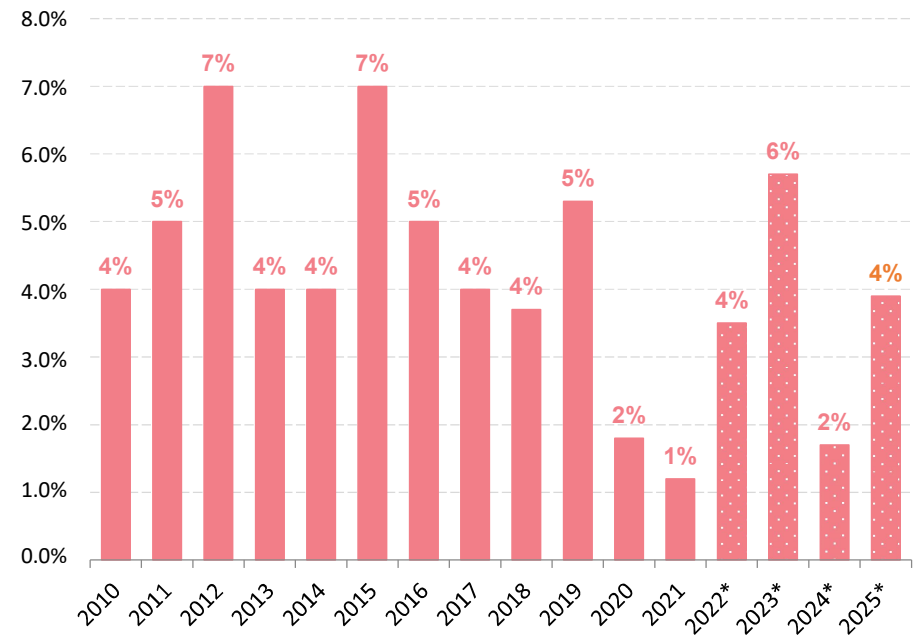
Expiring patents



Class A drugs (prescribed by physicians): Global revenues at risk as patents expire from 2016 to 2025
(in billion Euro and in % on total market)



bln Euro

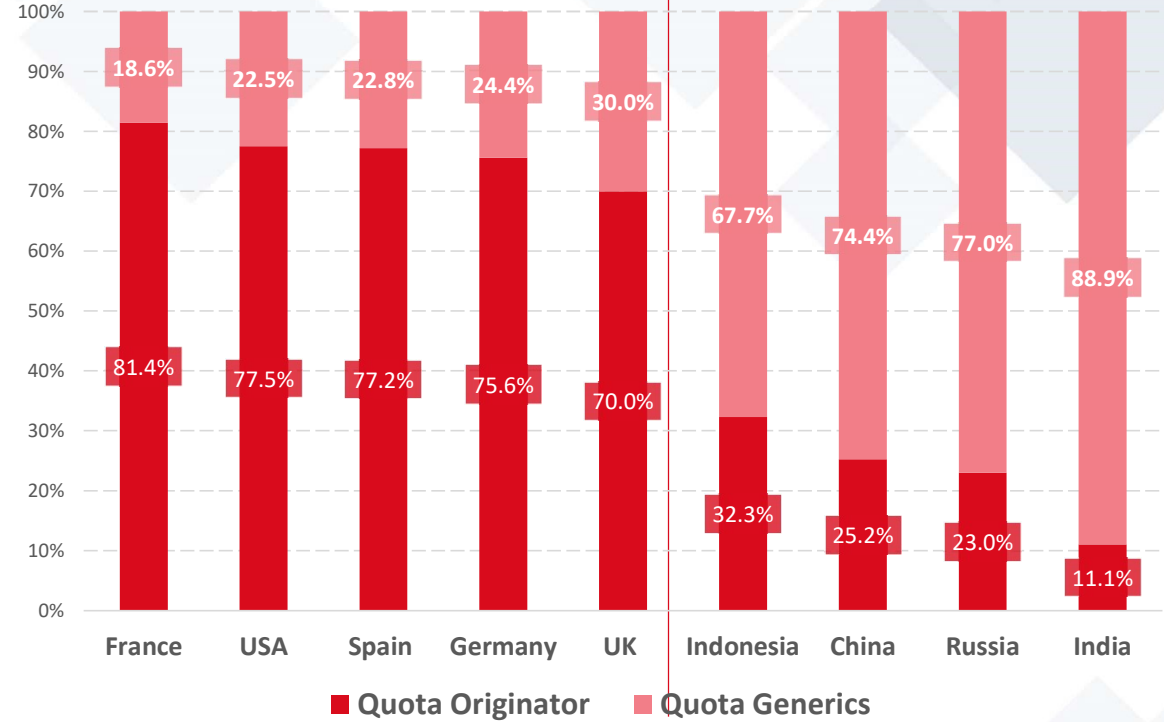
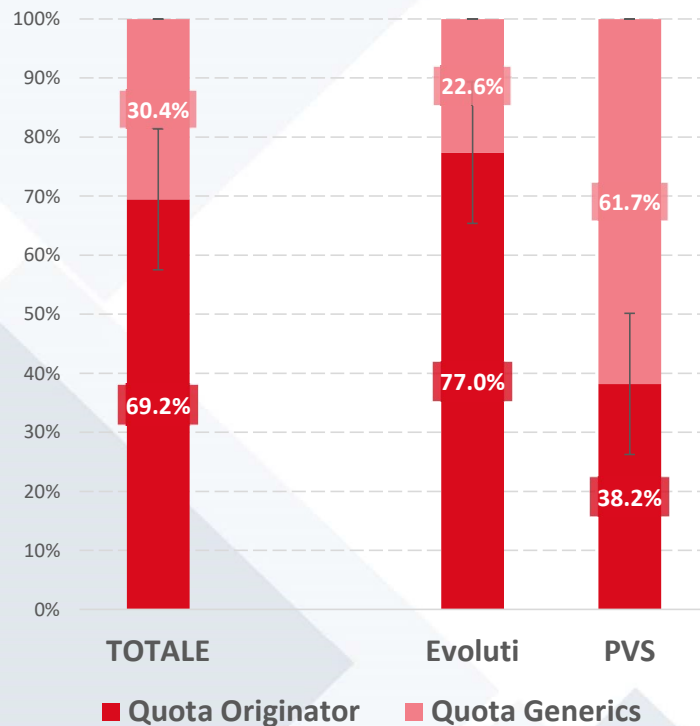


% share in the total market

For companies in the pharmaceutical industry, falling revenues can be avoided in part by diversifying into the in-house production of generic drugs.

Increased quota for generic and biosimilar drugs

Value share of generic drugs in the world (developed and developing countries) and country selection, 2021



As already highlighted in the introduction, **a strong growth of generic and biosimilar drugs is expected**, compared to branded products, with a progressive alignment between the so-called developed countries (where today generics are worth less than 25% of the total pharmaceutical expenditure) and developing countries, where on the contrary original drugs weigh less than 40%.

Effects of monetary and exchange rate policies

Monetary and exchange rate policies significantly influence the stability of the demand for medicines in individual countries (obviously mainly imported ones, but not only). In the final analysis, this depends on the strong segmentation of the market between patent and generic drugs, and is a factor that should always be considered by operators in the supply chain who interface with foreign markets with different currencies.

The patent market is governed by patents and, therefore, is characterised by a low (or zero) degree of import substitutability. This implies that depreciations and appreciations of the exchange rate determine only a variability of currency disbursements, but not a change in interchange volumes, which are instead determined by a rigid *pathology-driven* demand.

On the contrary, generics (and biosimilars) market presents a much greater price elasticity and, therefore, the lower competitiveness can determine a significant re-composition of the volumes of commercial interchange (for reasons of real competitiveness, influenced, in turn, by prices and exchange rate).

If multinational drug companies were unable to offset currency effects within their groups, they would be significantly affected by these exchange rate fluctuations because the *international marketing mix* is rigid in the patent segment, which is the most profitable. For this reason, many large companies in the industry tend to diversify by investing in the generic segment.



COVID-19 Focus

COVID-19 focus: impact on the drug industry and developments

The pandemic emergency that, starting from 2020, has affected the world has naturally led to a significant growth in the demand for drugs for the treatment of Covid-19, not only with regard to vaccines but also to all categories of drugs required for ancillary therapies and for the treatment of “long Covid” cases. In parallel, R&D activities for the development of experimental therapies and vaccines for prophylactic and therapeutic purposes have multiplied.

In addition to these direct effects, the pandemic has also led to significant supply chain effects in terms of distribution (wholesalers and pharmacies) with an increase in e-commerce for pharmacies and the offer of new services and assistance, including telehealth, home purchase and distribution of pharmaceutical products, biomedical products and personal protective equipment. Thus, both the number of users and sales volumes have increased. In part, this effect was amplified by the need for pharmacies to increase average inventories.

For hospital pharmaceuticals, however, a slowdown was observed both in the purchase of diagnostic devices (other than swabs and reagents), and in the restocking of drugs related to therapies considered less urgent. This negative effect is expected to reabsorb during the 2022-2023 two-year period.

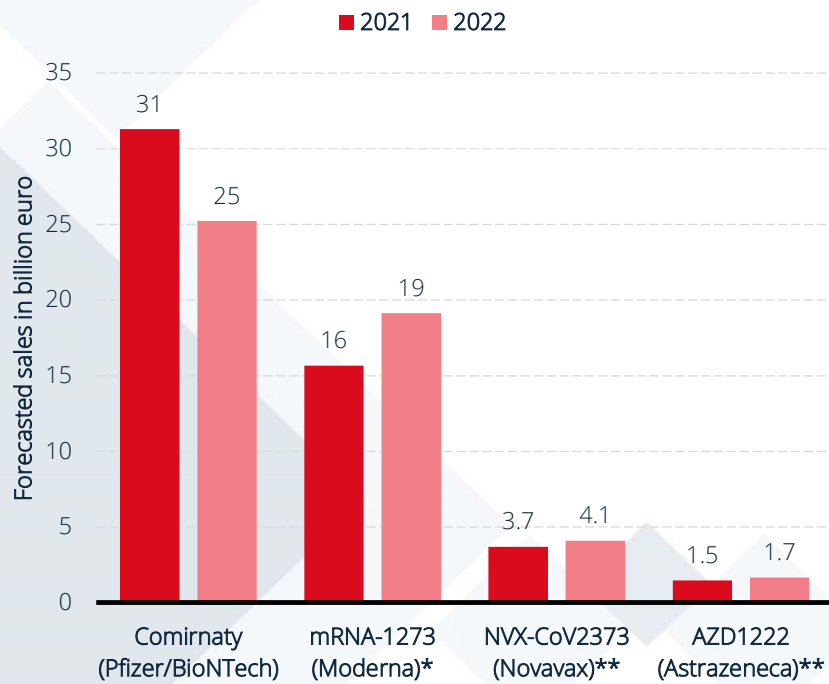
In the medium term, in addition to the recovery of spending deferred during the pandemic, they are likely:

- Increased patient awareness toward disease prevention and treatment, with growth in health care (including diagnostics and pharmaceuticals) and OTC
- Increased market perception of value toward the development and commercialisation of new drugs, vaccines, therapies, and medical devices
- A more widespread digitalisation of the sector, through the forced emergent experimentation, with the introduction of new online services that facilitate and improve services for end consumers (for example, e-commerce and online services offered by pharmacies and mobile-Healthcare services, with remote control of patients through *apps* and mobile devices)
- New public and private investments aimed at making medical, hospital and pharmaceutical distribution facilities more efficient and self-sufficient

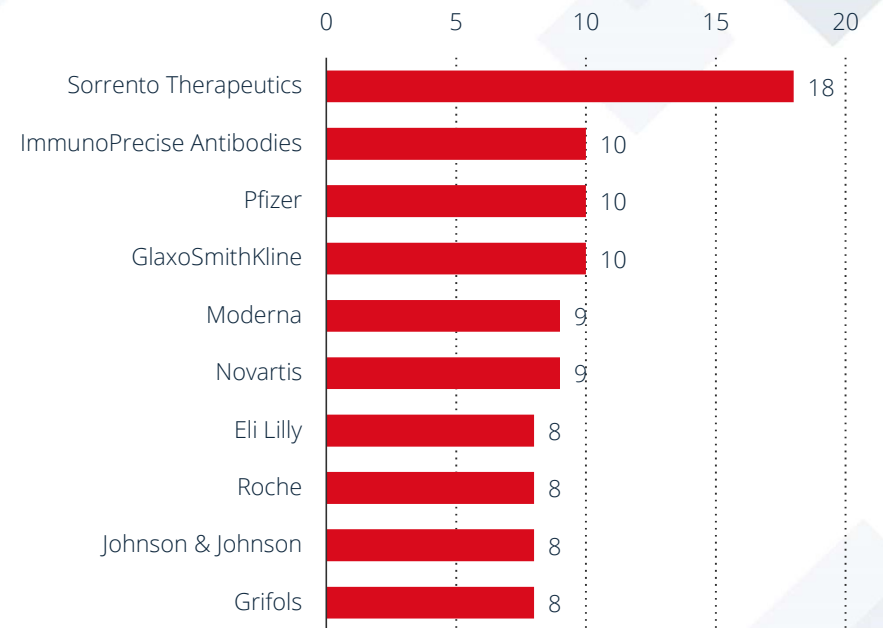
COVID-19 Focus: trends and developments

Sales (in billion EURO) of some COVID-19 vaccines and number of vaccines in development by major pharmaceutical companies

Forecast sales of select COVID-19 vaccines worldwide, 2021-2022

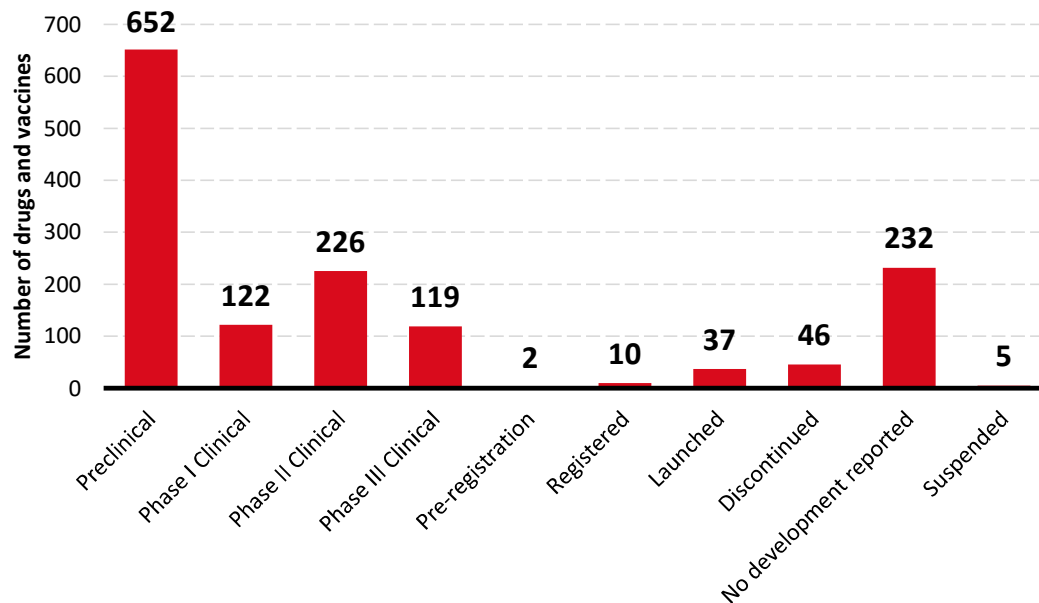


Top companies by COVID-19 treatment vaccines in development, February 2022



COVID-19 Focus: trends and developments

Number of COVID-19 treatment vaccines in development worldwide by phase, Feb 2022



Vaccine research against COVID-19 still continues consistently worldwide. There are still more than 1,000 (1,119 to be exact) vaccines in development worldwide, more than half of which are still in the preclinical phase.

Leading drugs worldwide based on projected 2022 sales (in billion Euro)

	2022f
Comirnaty - COVID19 vaccine (Pfizer)	25.3
Spikevax - COVID19 vaccine (Moderna)	19.0
Humira (AbbVie)	17.7
Keytruda (Merck & co)	17.0
Eliquis (BMS/Pfizer)	10.3
Revlimid (BMS)	9.8
Stelara (J&J)	8.8
Biktarvy (Gilead)	8.5
Opdivo (BMS)	7.8
Dupixent (Sanofi/Regeneron)	6.4

The impact of COVID-19 is also seen on drug sales. In 2021, Pfizer's vaccine was the best-selling product worldwide, and estimates for 2022 confirm both vaccines (Pfizer and Moderna) to lead the list of drugs with the highest expected sales, ousting best-sellers Humira (RA treatment) and Keytruda (Oncology).



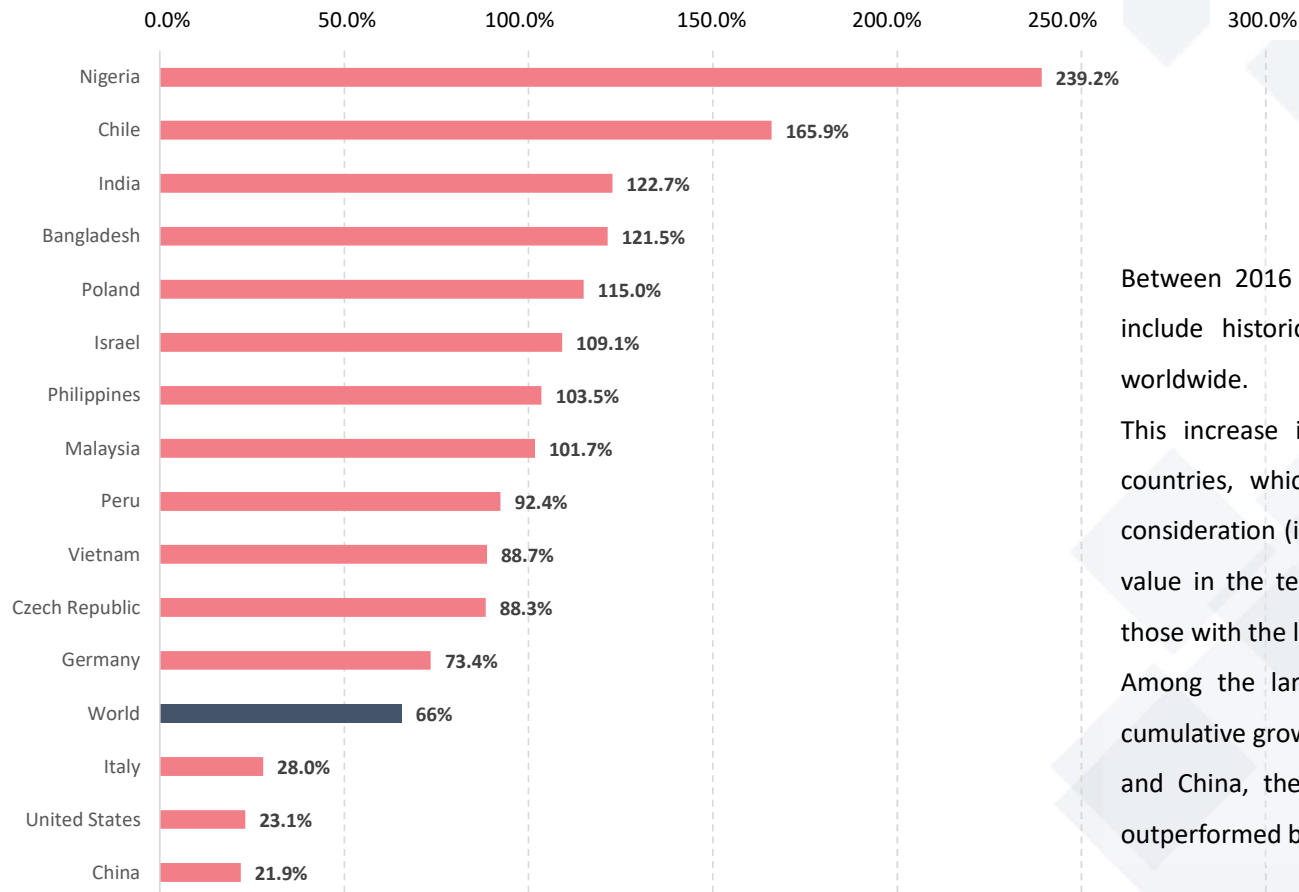
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Pharmaceutical spending 2021 -2025 Forecast



Overall growth of the pharmaceutical industry between 2016 and 2025

Overall % growth, by country



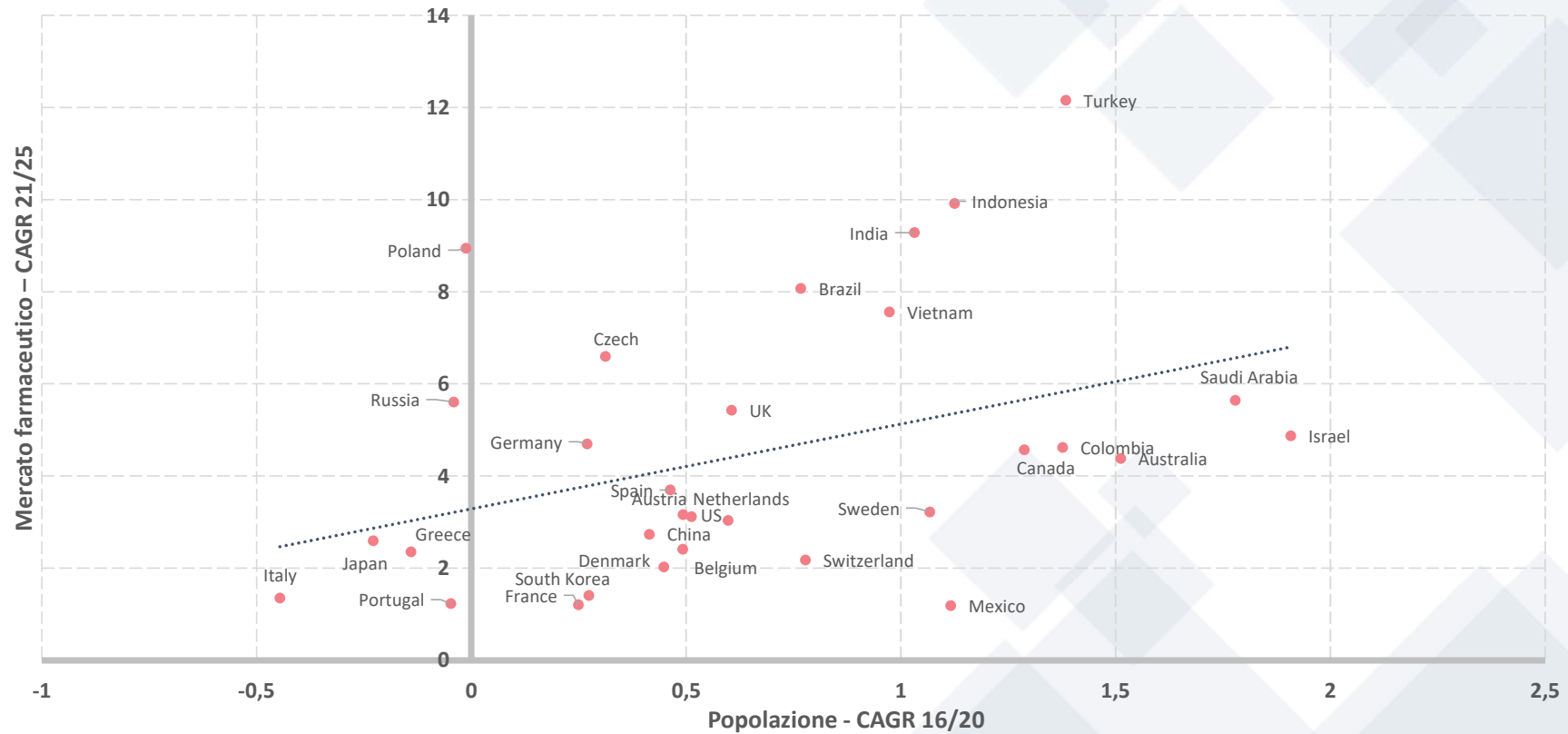
Between 2016 and 2025, **the pharmaceutical sector** will record - to include historical and forecast data - an **overall growth of 66%** worldwide.

This increase is driven by a series of countries, mainly emerging countries, which have **doubled** their volumes in the period under consideration (in **Nigeria**, the pharmaceutical market will even triple its value in the ten years analysed), among which **India and Poland** are those with the largest volumes.

Among the larger markets, Germany is the best performer with a cumulative growth of 73.4%, above the world average; the United States and China, the first two markets by volume, grew by around 20%, outperformed by Italy, which recorded an overall increase of 28%.

Sources: Torrey Partners; OECD

Pharmaceutical Market vs. Population Growth



The graph shows the correlation between population growth and demand for drugs, with record dynamics in countries such as Turkey, Indonesia, India and Vietnam, which will also experience strong economic development in the coming years. An ageing population will affect spending more than elsewhere in countries such as Germany, the Czech Republic, and Great Britain.

Pharmaceutical spending

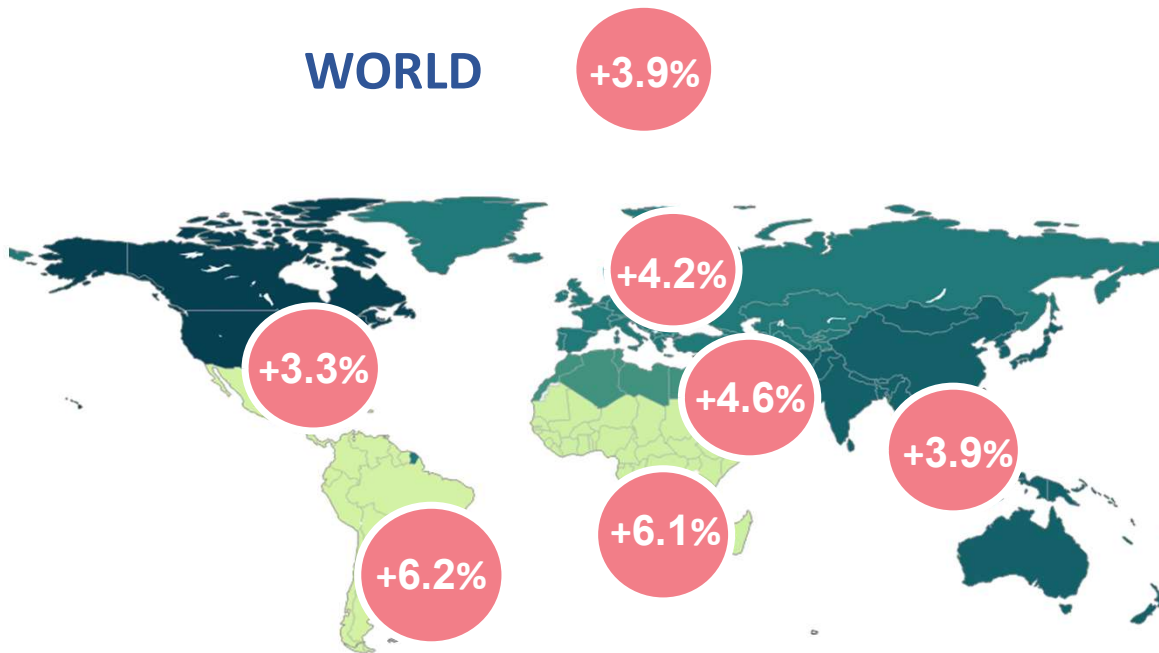
Macro areas Expected growth in 2021-2025



Forecast growth of pharmaceutical spending by macro area

CAGR 2021-2025

WORLD



Globally, drug sales will increase by 2025 at a rate of 3.9% per year.

Latin America and Sub-Saharan Africa will lead the growth, with a CAGR of 6.2% and 6.1%, respectively.

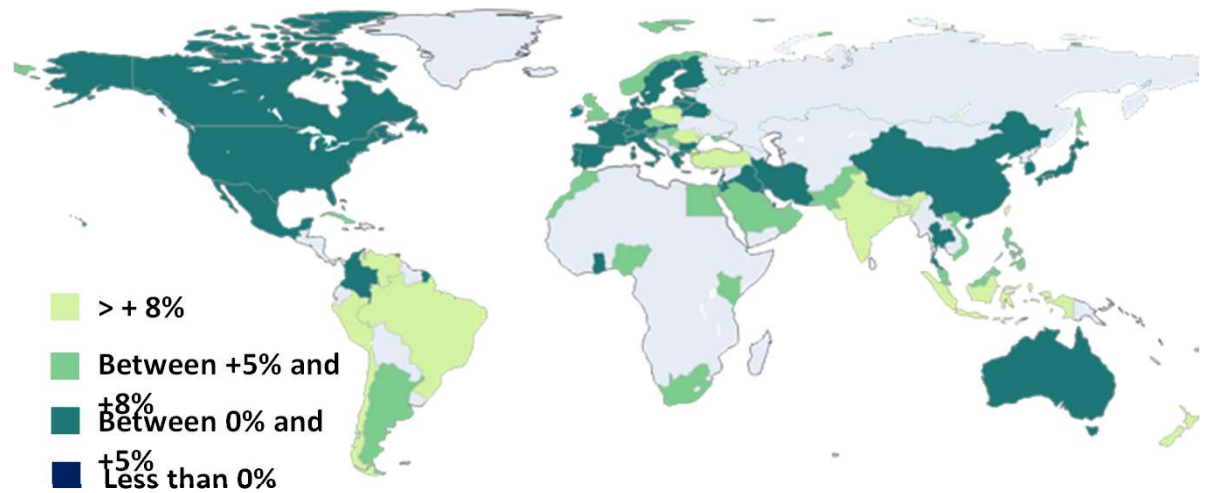
Europe and the Middle East will grow at a rate of 4.2% and 4.6%, followed by Asia and North America, which will experience a CAGR of 3.9% and 3.3%.



Pharmaceutical markets forecast

CAGR 2021-2025

The Pharma world will grow at two speeds: **Western countries will grow at an average annual rate of between 0 and 5% by 2025**, while the pharmaceutical market in **developing markets will grow at a rate of more than 5%**



Source: Ucima Study Center

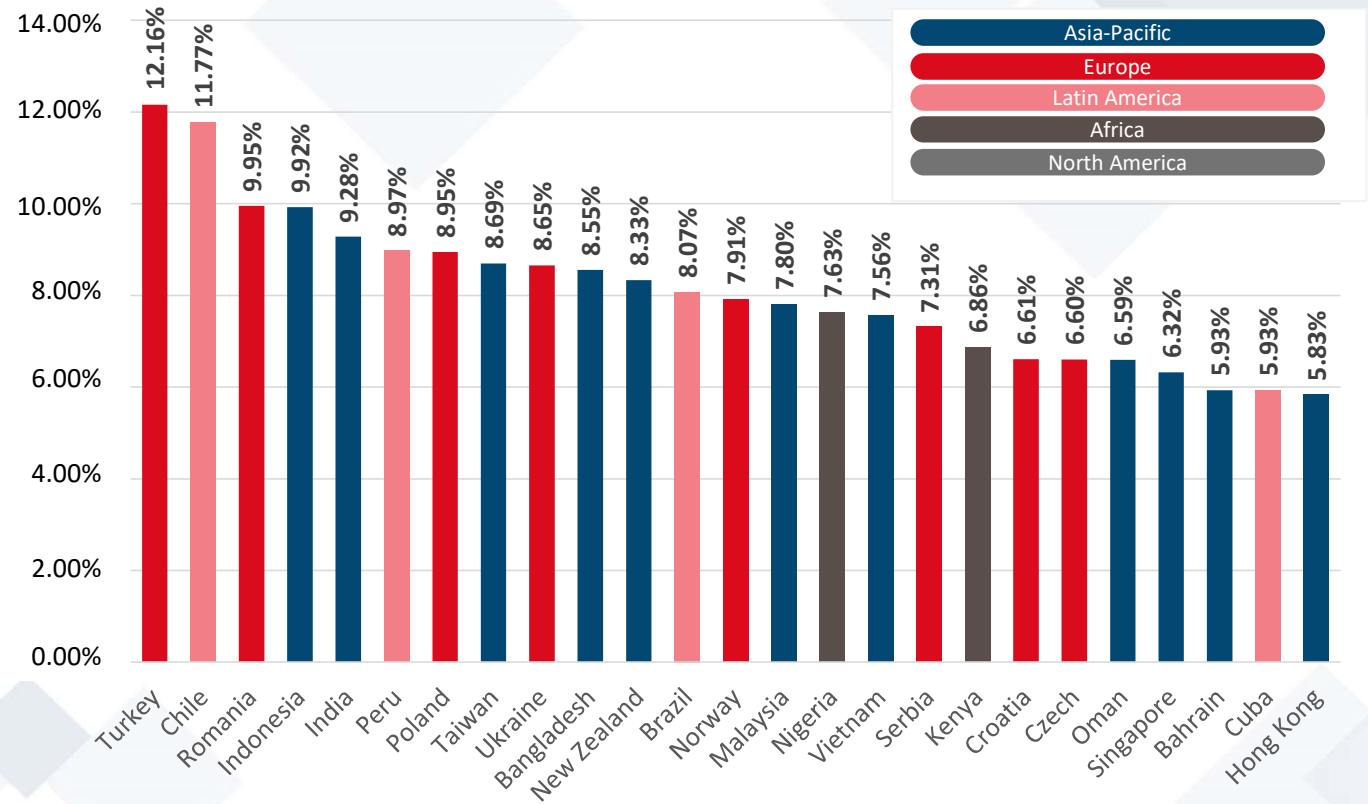
Pharmaceutical markets forecast

CAGR 2021-2025

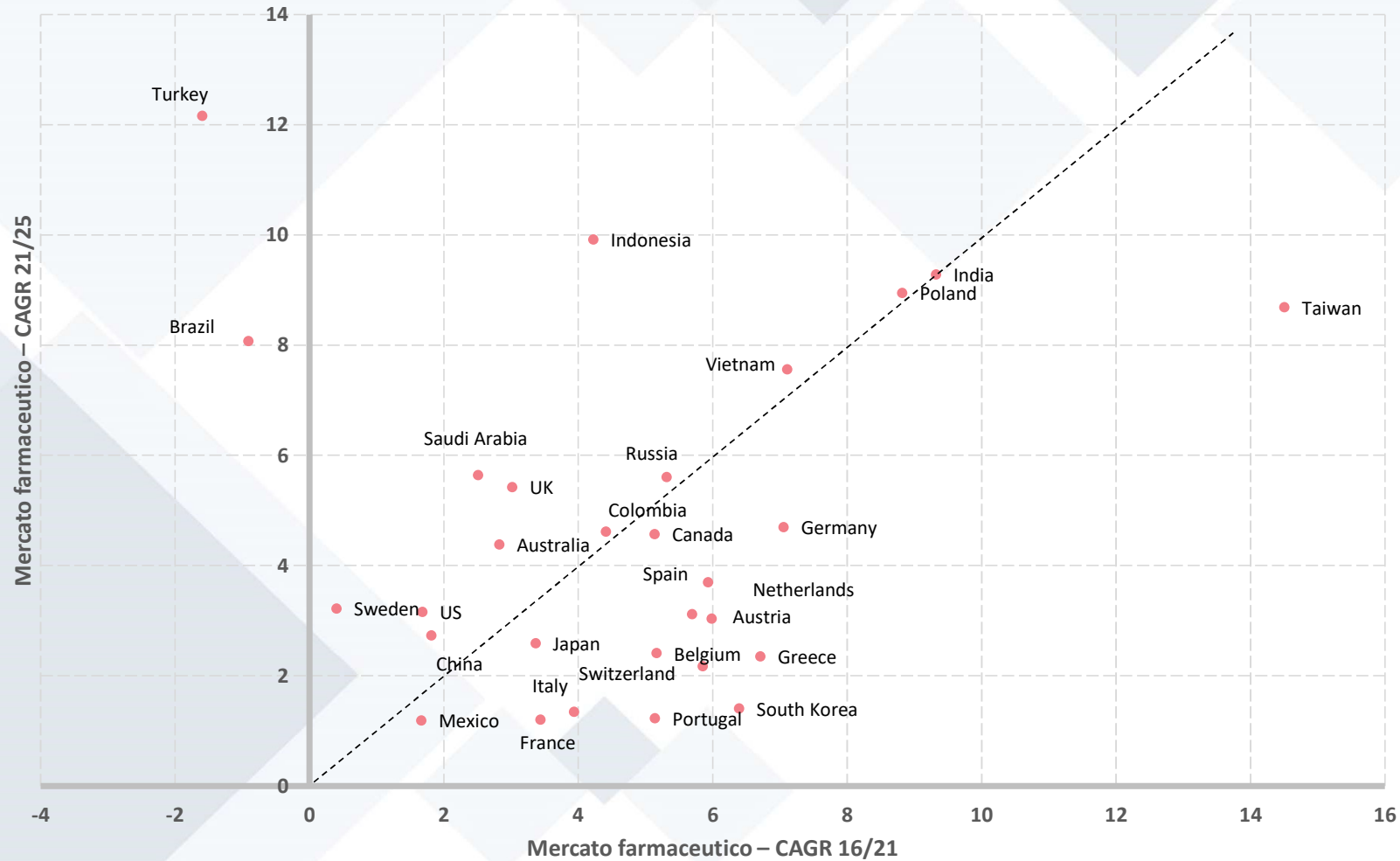
Turkey and Chile lead the rankings for expected growth in global pharmaceutical markets over the 2021-2025 period.

European nations are well represented in the top group: in fact, Romania, Poland, Norway, Serbia, Croatia and the Czech Republic are among the countries with the best expected performance.

The second largest geographical area in the growth rankings is Asia-Pacific, which places Indonesia, India, Taiwan, Bangladesh, New Zealand, Malaysia, Vietnam and Singapore among the top countries.



Scatter Growth in the last 5 years vs. Growth in the next 5 years



The graph highlights how markets, such as Taiwan, India, Indonesia and Poland have been and will be the most dynamic in terms of pharmaceutical spending. In contrast, Turkey and Brazil, which have even decreased their pharmaceutical spending over the past five years, will get back on track. Countries such as China, the USA and Sweden are stable and below the average trend of the world market.



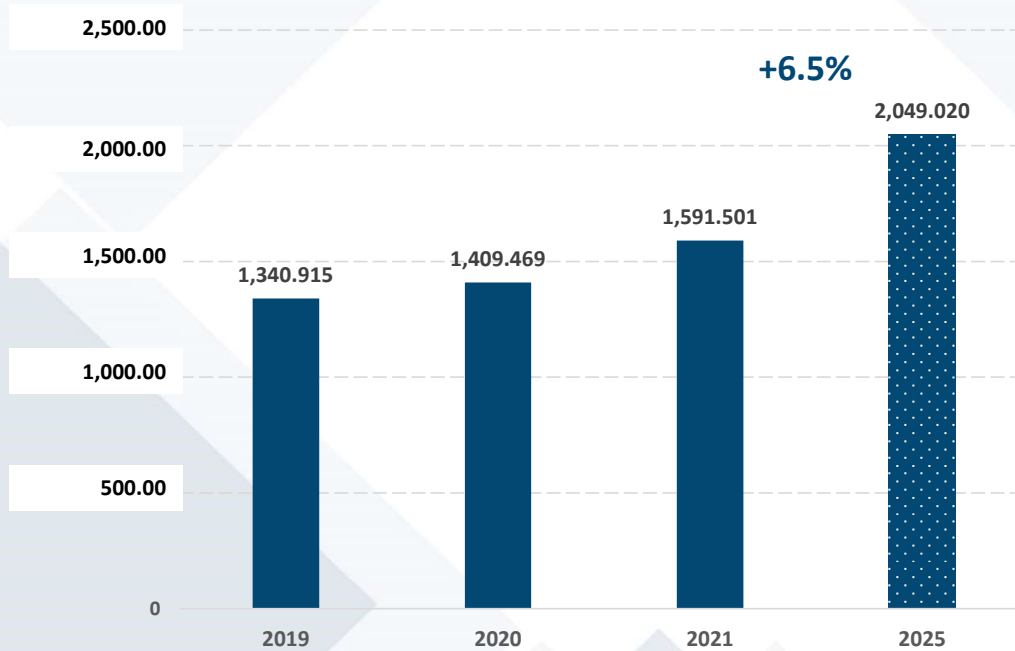
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PHARMACEUTICAL MARKET



Pharmaceutical Manufacturing

Million Euro



The global production of the **Life Sciences** sector (pharmaceuticals, nutraceuticals, cosmeceuticals and biotech) recorded a total volume of 1.591 billion Euro globally in 2021, an increase of 12.9% compared to the previous year.

The industry is **expected to grow by an average of 6.5% per year by 2025**, to reach 2,049 billion Euro.

Pharmaceutical production in individual countries

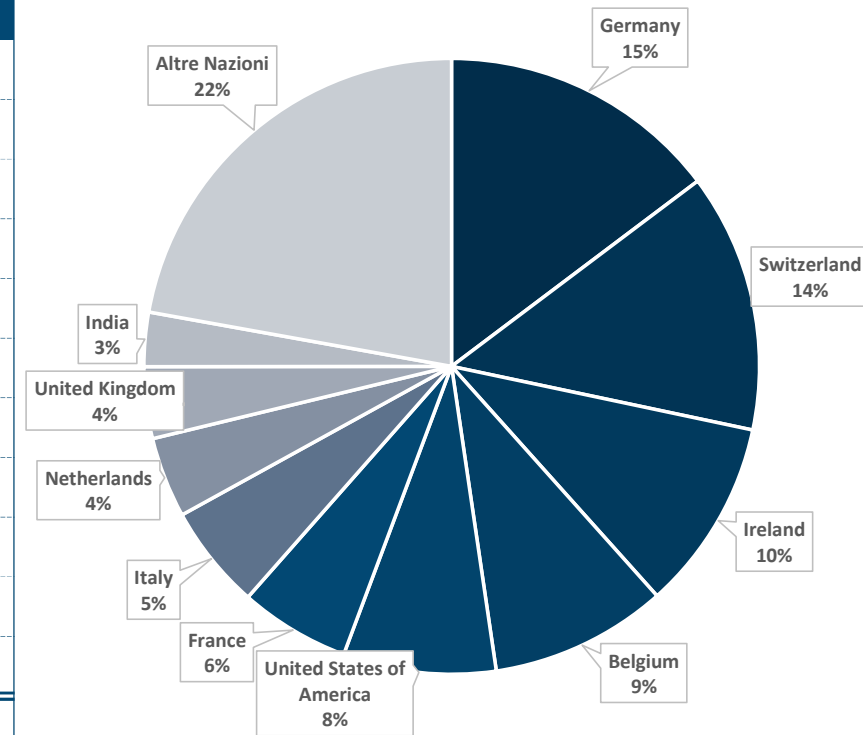
Million Euro

Country	2020	2021	2025	CAGR 21/25
China	382.222	420.056	497.101	4.3%
USA	252.798	272.142	351.886	6.6%
Ireland	104.026	117.096	143.970	5.3%
Switzerland	70.440	74.780	90.649	4.9%
Japan	64.290	65.419	71.368	2.2%
Germany	52.557	55.733	64.979	3.9%
France	47.400	49.956	57.936	3.8%
United Kingdom	41.291	43.697	56.826	6.8%
Puerto Rico	38.652	40.971	50.756	5.5%
Belgium	33.197	40.083	47.617	4.4%
India	30.021	33.082	45.012	8.0%
Italy	28.987	32.056	36.654	3.4%
Spain	17.112	18.900	23.407	5.5%
Russia	11.510	15.862	27.429	14.7%
Israel	11.256	12.054	15.406	6.3%

The presence of large multinational pharmaceutical companies with offices in different countries means that the national production figure must be interpreted taking into account also the intra-group strategies. In any case, at the level of individual countries, **China is the leading producer of pharmaceuticals, with a production of 420 billion Euro and a forecast average annual increase of 4.3% by 2025.** This is followed by the United States with 272 billion Euro and expected growth of 6.6%, and Ireland with 117.1 billion Euro and an increase of 5.3% over the next three years. The cumulative output of the top 15 players contributes to more than 80% of global volumes.

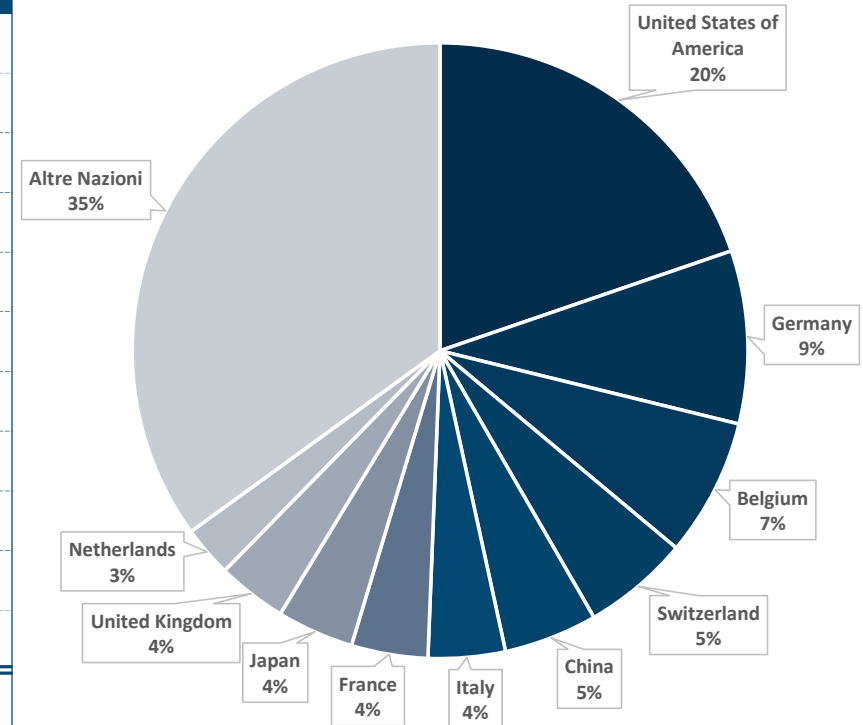
Key Export data (in bln Euro)

Exporters	2016	2017	2018	2019	2020	VAR% 20/19	CAGR 16/20
Germany	65.5	71.1	78.6	77.7	83.1	7.0%	6.2%
Switzerland	59.9	61.6	63.0	73.5	76.8	4.5%	6.4%
Ireland	28.0	33.3	44.6	47.0	56.9	21.1%	19.3%
Belgium	36.7	36.3	39.0	45.6	52.5	15.2%	9.4%
United States of America	40.7	38.0	39.3	45.5	45.3	-0.3%	2.8%
France	27.0	27.4	28.1	31.2	32.7	5.0%	4.9%
Italy	18.9	22.2	23.1	29.6	31.0	4.7%	13.2%
The Netherlands	14.3	20.3	17.8	21.2	23.9	12.8%	13.6%
United Kingdom	28.7	28.3	24.9	23.6	21.2	-9.9%	-7.3%
India	11.7	11.3	12.0	14.4	16.1	11.3%	8.2%
Other countries	93.0	95.1	100.3	112.1	125.2	11.8%	7.7%
Total	424.4	444.8	470.7	521.2	564.8	8.4%	7.4%



Key import data (in bln Euro)

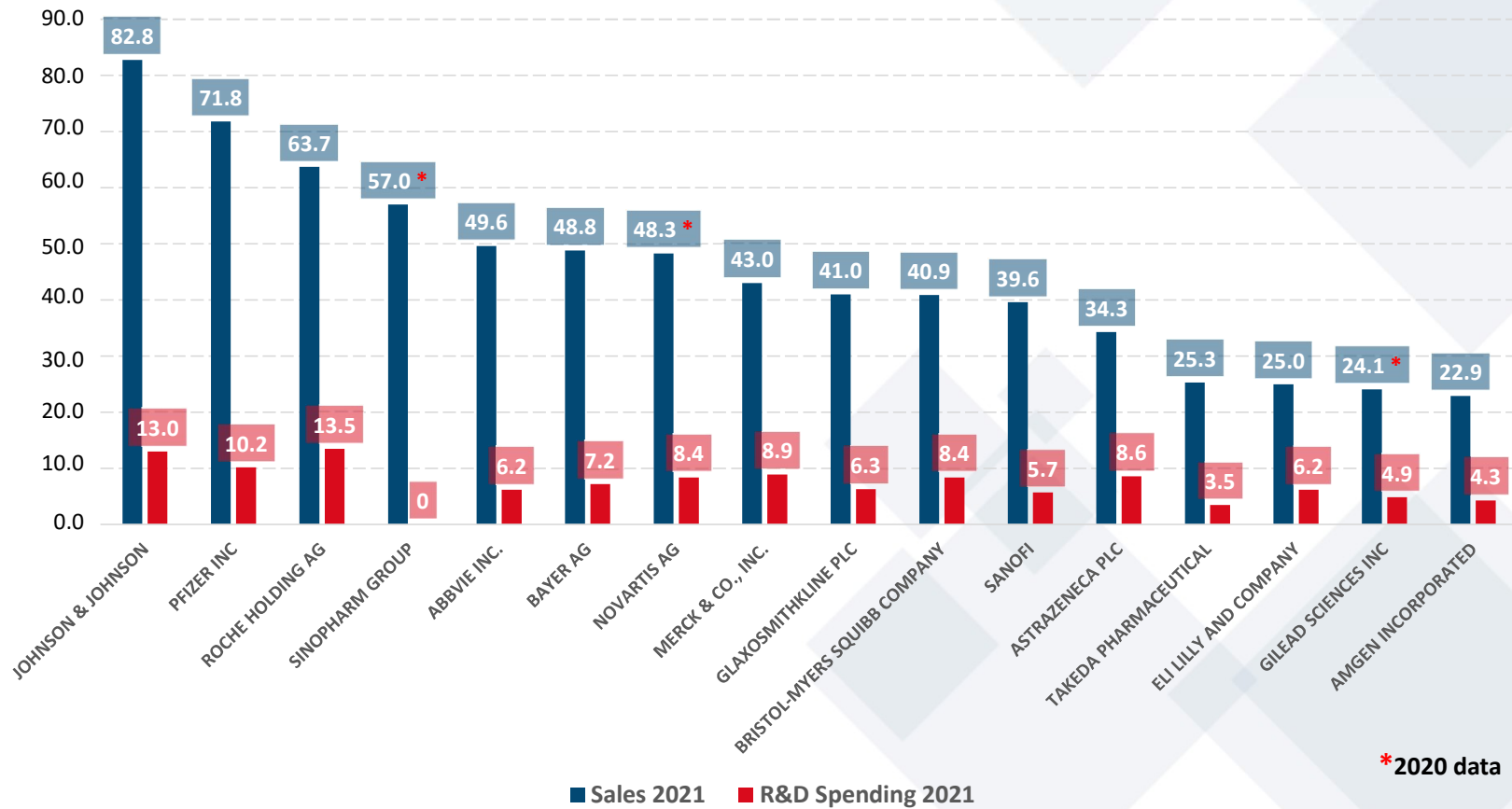
Importers	2016	2017	2018	2019	2020	VAR% 20/19	CAGR 16/20
United States of America	81.6	83.7	95.6	112.0	119.8	6.9%	10.1%
Germany	41.1	44.2	45.8	49.1	55.1	12.3%	7.6%
Belgium	30.2	29.6	33.3	39.4	44.0	11.7%	9.8%
Switzerland	22.0	25.2	25.2	28.0	33.9	21.1%	11.5%
China	18.3	21.8	23.0	29.3	29.9	2.1%	13.2%
Italy	18.8	20.3	22.3	23.8	24.5	2.8%	6.9%
France	19.4	19.8	20.6	21.7	24.5	12.6%	6.0%
Japan	21.4	19.3	21.0	23.6	24.4	3.5%	3.3%
United Kingdom	29.0	28.7	25.0	24.2	22.2	-8.2%	-6.4%
The Netherlands	11.4	11.9	11.4	13.6	16.3	19.8%	9.2%
<i>Other countries</i>	<i>169.1</i>	<i>177.8</i>	<i>186.3</i>	<i>200.9</i>	<i>212.3</i>	<i>5.7%</i>	<i>5.9%</i>
Total	424.4	444.8	470.7	521.2	564.8	8.4%	7.4%



TOP PLAYERS

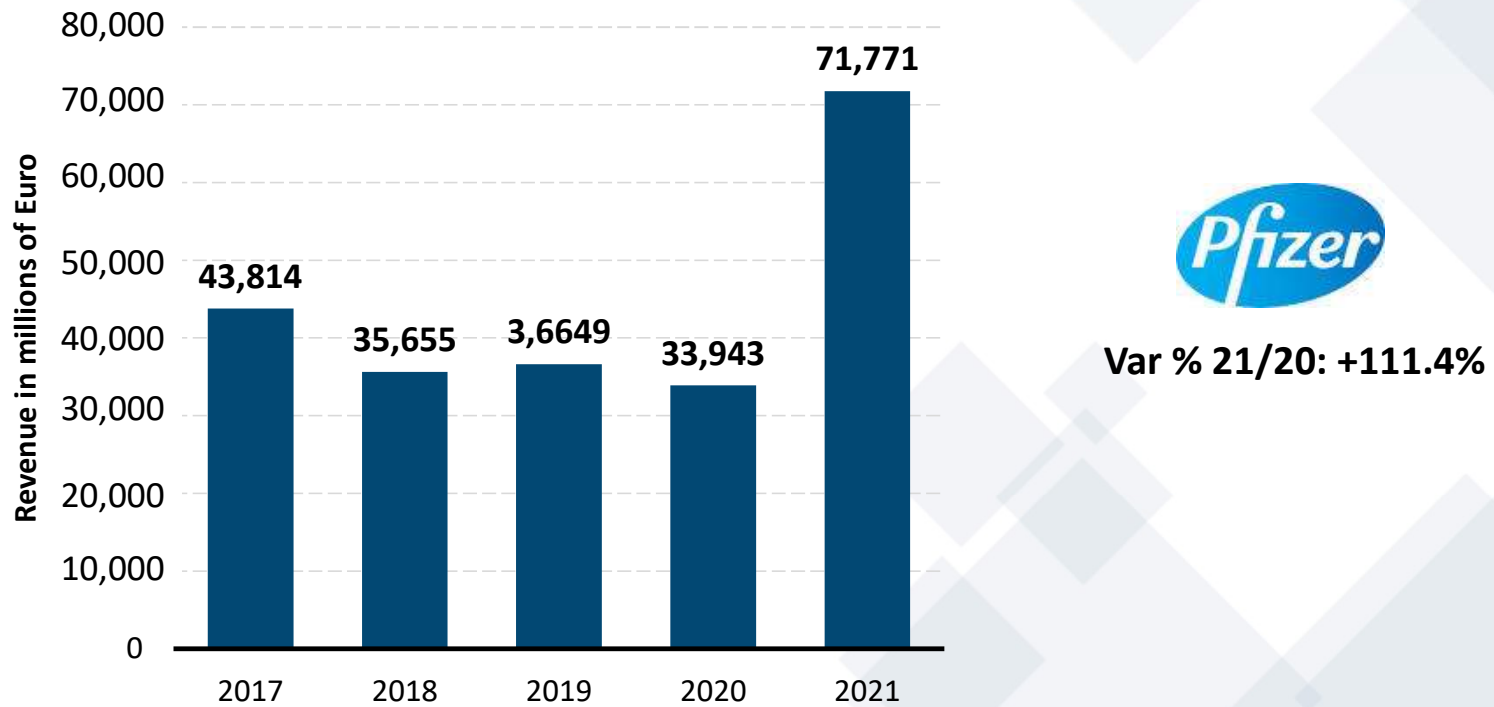
Top players and positioning

Top 15 global pharmaceutical companies: revenues and R&D expenditure in 2021 (in bln Euro)



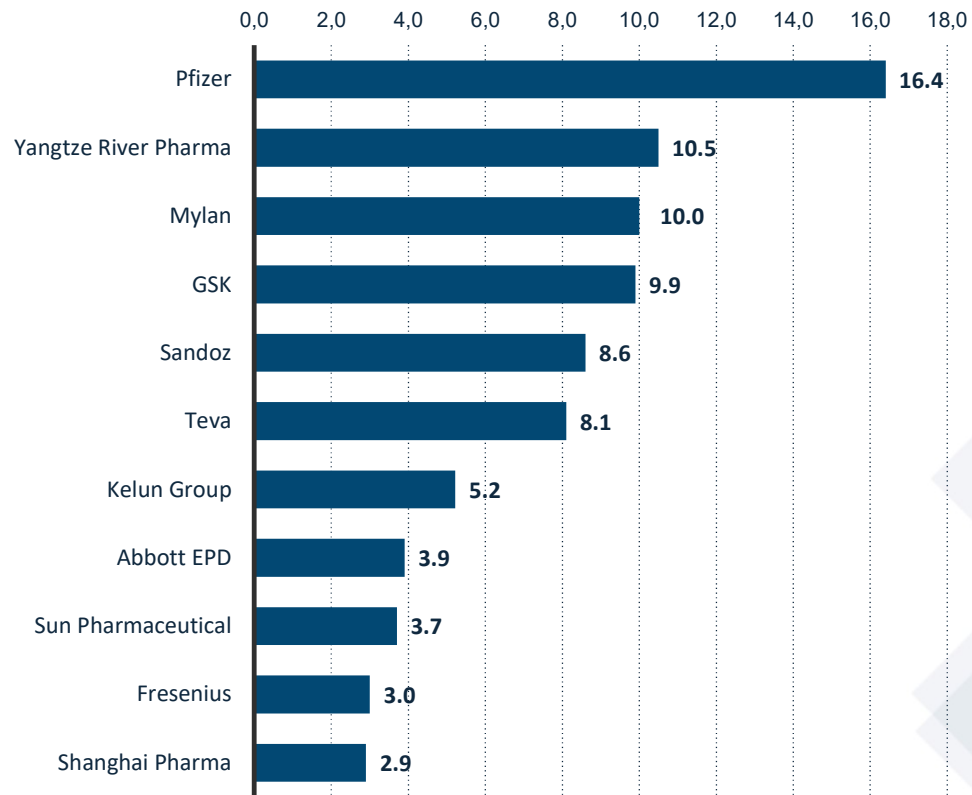
The vaccine market

Pfizer's total revenue in 2017-2021



Increased quota for generic and biosimilar drugs

Main producers of generic drugs: revenues 2020 (in bln Euro)



Many companies or groups also produce a high share of turnover in the Generic segment, as we discussed in the first part of the report

PLAYERS LIST

More than 500 mln turnover (in mln Euro)

Company name	Country	NACE code	No. of Employees	2020 Turnover	2019 Turnover
JOHNSON & JOHNSON	U.S.A.	2120	134.500	67,300.2	73,045.2
PROCTER & GAMBLE CO	U.S.A.	2041	101.000	63,359.6	59,476.3
ROCHE HOLDING AG	Switzerland	2120	101.465	55,804.9	58,612.1
BAYER AG	Germany	2120	99.538	48,758.0	48,556.0
SANOFI	France	2120	99.412	45,709.0	39,021.0
NOVARTIS AG	Switzerland	2120	105.794	42,083.0	46,761.6
MERCK & CO., INC.	U.S.A.	2120	74.000	39,111.7	41,694.9
GLAXOSMITHKLINE PLC	U.K.	2120	94.066	37,710.8	39,858.6
ABBVIE INC.	U.S.A.	2120	47.000	37,327.1	29,611.9
BRISTOL-MYERS SQUIBB COMPANY	U.S.A.	2120	30.250	34,649.2	23,273.1
PFIZER INC	U.S.A.	2120	78.500	34,152.1	36,649.5
ABBOTT LABORATORIES	U.S.A.	2120	109.000	28,203.1	28,399.5
L'OREAL	France	2042	85.392	27,992.1	29,873.6
ASTRAZENECA PLC	U.K.	2120	76.100	22,143.3	22,089.2
AMGEN INCORPORATED	U.S.A.	2120	24.300	20,718.8	20,795.8
GILEAD SCIENCES INC	U.S.A.	2120	13.600	20,119.8	19,983.1
ELI LILLY AND COMPANY	U.S.A.	2120	35.000	19,998.2	19,867.8
HENKEL AG & CO.	Germany	2041	52.950	19,344.0	20,259.0
MSD INTERNATIONAL GMBH	Ireland	2120	n/a	19,246.7	16,511.9
MERCK KOMMANDITGESELLSCHAFT AUF AKTIEN	Germany	2120	58.096	18,275.0	16,822.0
DUPONT DE NEMOURS, INC.	U.S.A.	2110	34.000	16,622.1	19,149.0
RECKITT BENCKISER GROUP PLC	U.K.	2041	43.500	15,305.4	15,007.8
TEVA PHARMACEUTICAL INDUSTRIES LIMITED	Israel	2120	40.216	13,664.7	15,100.6
COLGATE PALMOLIVE CO	U.S.A.	2042	34.200	13,422.7	13,969.2
ESTEE LAUDER COMPANIES INC. (THE)	U.S.A.	2042	62.000	12,764.8	13,060.6
PPG INDUSTRIES INC	U.S.A.	2030	46.900	11,273.7	13,482.3
BIOGEN INC.	U.S.A.	2120	9.100	10,956.4	12,798.6
VIATRIS INC.	U.S.A.	2120	45.000	9,735.2	10,237.2
B. BRAUN SE	Germany	2120	64.217	7,833.5	7,787.2
BEIERSDORF AG	Germany	2042	20.306	7,250.0	7,820.0
REGENERON PHARMACEUTICALS INC	U.S.A.	2120	9.123	6,924.5	6,999.6
ORGANON & CO.	U.S.A.	2120	9.950	6,597.7	8,483.2
CHLOROX CO	U.S.A.	2041	9.000	6,002.0	5,460.5
SC JOHNSON & SON INC	U.S.A.	2041	13.000	5,936.0	n/a

Company name	Country	NACE code	No. of Employees	2020 Turnover	2019 Turnover
GIVAUDAN SA	Switzerland	2042	15.852	5,884.5	5,739.8
ALCON AG	Switzerland	2120	23.655	5,759.9	6,732.2
HINDUSTAN UNILEVER LIMITED	India	2041	8.525	5,456.8	4,816.8
ZOETIS INC.	U.S.A.	2120	11.300	5,439.7	5,572.4
GRIFOLS S.A.	Spain	2120	23.668	5,340.0	5,098.7
VERTEX PHARMACEUTICALS INCORPORATED	U.S.A.	2120	3.400	5,057.2	3,705.6
RPM INTERNATIONAL INC.	U.S.A.	2030	15.490	4,945.2	4,990.2
ALEXION PHARMA INTERNATIONAL OPERATIONS UNLIMITED COMPANY	Ireland	2110	633	4,332.3	3,441.9
COTY INC.	U.S.A.	2042	11.430	4,213.1	5,525.4
PERRIGO CO PLC	Ireland	2120	11.500	4,129.3	4,306.0
CHURCH & DWIGHT CO INC	U.S.A.	2041	5.100	3,989.7	3,879.0
A. MENARINI - INDUSTRIE FARMACEUTICHE RIUNITE - S.R.L.	Italy	2120	17.673	3,902.9	3,834.3
SUN PHARMACEUTICAL INDUSTRIES LIMITED	India	2120	28.007	3,897.6	3,992.8
MAX FINANCIAL SERVICES LTD	India	2120	15	3,595.6	2,185.6
ORTHO-CLINICAL DIAGNOSTICS INC	U.S.A.	2120	4.500	3,290.7	n/a
BIOMERIEUX SA	France	2120	12.624	3,165.1	2,720.9
BASF COATINGS GMBH	Germany	2030	n/a	3,089.0	3,746.0
SULZER AG	Switzerland	2030	15.054	3,088.5	3,445.3
STADA-ARZNEIMITTEL AG	Germany	2120	12310	3,037.2	2,648.6
AVON PRODUCTS INC	U.S.A.	2042	19.500	2,954.3	4,240.0
AUROBINDO PHARMA LIMITED	India	2120	19.364	2,902.6	2,802.8
MAPEI S.P.A.	Italy	2030	10.610	2,827.5	2,830.9
DIVERSEY INC	U.S.A.	2042	11.500	2,803.4	n/a
CATALENT, INC.	U.S.A.	2120	17.300	2,763.3	2,212.7
IPSEN	France	2120	5.703	2,716.4	2,708.4
ELANCO ANIMAL HEALTH INCORPORATED	U.S.A.	2120	10.200	2,667.5	2,733.7
CSL BEHRING GMBH	Germany	2110	3.236	2,569.4	2,458.7
ASIAN PAINTS LIMITED	India	2030	7.134	2,519.7	2,453.6
LES LABORATOIRES SERVIER	France	2120	43	2,461.4	2,300.6
PAUL HARTMANN AG	Germany	2120	10.625	2,460.6	2,212.2
ENDO INTERNATIONAL PLC	Ireland	2120	3.397	2,381.3	2,635.3
CHIESI FARMACEUTICI S.P.A.	Italy	2120	1.942	2,239.9	2,006.7
CIPLA LIMITED	India	2120	25.672	2,232.8	2,078.9
DR REDDY'S LABORATORIES LIMITED	India	2120	22.739	2,211.6	2,164.0

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210 - Manufacture of basic pharmaceutical products and pharmaceutical preparations
 2110 - Manufacture of basic pharmaceutical products
 2120 - Manufacture of pharmaceutical preparations

PLAYERS LIST

More than 500 mln turnover (in mln Euro)

Company name	Country	NACE code	No. of Employees	2020 Turnover	2019 Turnover
IDEXX LABORATORIES INC	U.S.A.	2120	9.300	2,205.7	2,142.5
ALTANA AG	Germany	2120	6.533	2,189.2	2,263.0
AIR LIQUIDE INDUSTRIEGASE GMBH & CO. KG	Germany	2110	4.024	2,147.4	1,745.0
HIKMA PHARMACEUTICALS PLC	U.K.	2120	8.681	1,928.9	2,002.8
JAZZ PHARMACEUTICALS PUBLIC LIMITED COMPANY	Ireland	2120	1.250	1,926.1	1,924.3
INTAS PHARMACEUTICALS LIMITED	India	2120	n/a	1,913.9	1,800.9
MALLINCKRODT PLC	Ireland	2120	3.100	1,852.7	3,287.1
HORIZON PHARMA PUBLIC LIMITED COMPANY	Ireland	2120	1.395	1,793.2	1,157.2
SEAGEN INC	U.S.A.	2120	2.092	1,772.9	816.0
LUPIN LIMITED	India	2120	18.573	1,764.2	2,038.5
CADILA HEALTHCARE LIMITED	India	2120	24.412	1,752.3	1,719.5
VIFOR PHARMA AG	Switzerland	2120	2.713	1,751.2	1,761.4
ROYALTY PHARMA PLC	U.S.A.	2120	51	1,729.3	n/a
CAPSUGEL INC	U.S.A.	2120	2.800	1,673.9	n/a
EMAMI AGROTECH LIMITED	India	2120	n/a	1,668.2	1,585.6
EDGEWELL PERSONAL CARE COMPANY	U.S.A.	2042	6.900	1,665.3	1,966.2
AMNEAL PHARMACEUTICALS INC	U.S.A.	2120	6.000	1,624.2	n/a
RICHTER GEDEON VEGYESZETI GYAR RT	Hungary	2120	12.885	1,553.3	1,533.6
REVLON, INC.	U.S.A.	2042	6.000	1,551.9	2,153.8
PARFUMS CHRISTIAN DIOR	France	2042	3.223	1,548.8	1,868.0
KRKA DD NOVO MESTO	Slovenia	2120	11.677	1,544.5	1,505.8
BIOMARIN PHARMACEUTICAL INC	U.S.A.	2120	3.059	1,516.1	1,516.9
BRACCO SPA	Italy	2110	3.591	1,509.1	1,513.5
TRULIEVE MANAGEMENT LLC	U.S.A.	2110	2.268	1,474.2	n/a
RECORDATI INDUSTRIA CHIMICA E FARMACEUTICA S.P.A.	Italy	2120	4.362	1,448.9	1,481.8
STO SE & CO. KGAA	Germany	2030	5.545	1,441.9	1,405.8
QUIDEL CORP	U.S.A.	2120	1.370	1,354.1	476.1
PT KALBE FARMA TBK	Indonesia	2120	12.137	1,338.2	1,453.2
GRUENENTHAL PHARMA GMBH & CO. KOMMANDITGESELLSCHAFT	Germany	2042	4.641	1,331.7	1,440.5
AKTSIONERNOE OBSHCHESTVO R-FARM	Russia	2120	2.060	1,329.5	1,184.7
GODREJ CONSUMER PRODUCTS LIMITED	India	2042	2.698	1,279.8	1,200.0
GLENMARK PHARMACEUTICALS LIMITED	India	2120	10.964	1,273.5	1,290.3
EMERGENT BIOSOLUTIONS INC.	U.S.A.	2120	2.200	1,267.5	984.5
DAIICHI SANKYO EUROPE GMBH	Germany	2120	2.071	1,228.8	1,109.3

Company name	Country	NACE code	No. of Employees	2020 Turnover	2019 Turnover
UNITED THERAPEUTICS CORP	U.S.A.	2120	950	1,208.8	1,289.7
OPKO HEALTH INC	U.S.A.	2120	5.269	1,169.8	802.9
PATANJALI AYURVED LIMITED	India	2120	n/a	1,139.0	1,098.4
DABUR INDIA LIMITED	India	2120	5.070	1,105.8	1,049.5
ANGELINI FRANCESCO S.P.A.	Italy	2100	2.893	1,041.7	n/a
JUBILANT PHARMOVA LIMITED	India	2120	36	1,034.7	1,109.6
ALKEM LABORATORIES LIMITED	India	2120	15.357	1,033.7	1,009.5
MERZ PHARMA GMBH & CO. KGAA	Germany	2120	3.180	1,023.5	1,246.5
VIRBAC	France	2120	4.907	1,015.4	948.9
ALBEA THOMASTON INC	U.S.A.	2042	1.560	1,013.8	n/a
ALFASIGMA S.P.A.	Italy	2120	2.692	1,009.2	1,070.4
VI JON LABORATORIES INC	U.S.A.	2042	350	974.7	n/a
IBNSINA PHARMA S.A.E.	Egypt	2120	6.770	973.5	925.4
AXALTA COATING SYSTEMS GERMANY GMBH & CO. KG	Germany	2030	1.789	951.4	1,042.8
TOLMAR INC	U.S.A.	2120	1.455	945.3	n/a
MARICO LIMITED	India	2042	1.629	934.4	886.4
TORRENT PHARMACEUTICALS LIMITED	India	2120	12.531	931.0	961.3
ACS DOBFAR SPA	Italy	2110	3.193	930.4	760.6
USANA HEALTH SCIENCES INC	U.S.A.	2110	1.943	924.7	944.4
BIOCON LIMITED	India	2120	13.609	888.0	812.8
VERBIO VEREINIGTE BIOENERGIE AG	Germany	2120	820	884.9	791.9
DIASORIN S.P.A.	Italy	2120	2.066	881.3	706.3
PIERRE FABRE DERMO-COSMETIQUE	France	2042	n/a	872.2	1,001.6
RADIENZ LIVING LLC	U.S.A.	2041	1.551	863.0	n/a
NIRMA LIMITED	India	2041	n/a	862.4	959.9
NEUROCRINE BIOSCIENCES INC	U.S.A.	2120	845	852.3	701.5
ALKERMES PUBLIC LIMITED COMPANY	Ireland	2120	2.245	846.5	1,042.3
BELLRING BRANDS, INC.	U.S.A.	2110	355	844.1	784.6
UCB PHARMA GMBH	Germany	2120	325	834.1	859.7
MARY KAY HOLDING CORP	U.S.A.	2042	4.000	816.6	n/a
ALMIRALL S.A	Spain	2120	1.787	814.5	910.7
DIVI'S LABORATORIES LIMITED	India	2120	16.818	806.2	651.6
PRESTIGE CONSUMER HEALTHCARE, INC.	U.S.A.	2120	505	804.6	879.0
DERMAPHARM HOLDING SE	Germany	2120	2.311	803.1	706.4

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PLAYERS LIST

More than 500 mln turnover (in mln Euro)

Company name	Country	NACE code	No. of Employees	2020 Turnover	2019 Turnover
GELITA AG	Germany	2110	2.579	793.2	783.1
BERGER PAINTS INDIA LIMITED	India	2030	3.814	792.6	773.3
SIEGFRIED HOLDING AG	Switzerland	2120	2.532	783.7	770.5
IRON CORP	U.S.A.	2030	5.615	781.5	903.0
MCBRIDE PLC	U.K.	2041	3.320	773.8	828.6
CHANEL PARFUMS BEAUTE	France	2042	1.703	761.4	879.1
KEDRION S.P.A.	Italy	2120	2.640	747.5	857.7
SOPHARMA AD	Bulgaria	2120	5.803	742.4	661.6
GUERBET	France	2120	2.635	725.2	825.1
CIECH SA	Poland	2041	3.445	720.3	855.8
ZAKLADY FARMACEUTYCZNE POLPHARMA S.A.	Poland	2120	n/a	716.8	771.3
PHIBRO ANIMAL HEALTH CORPORATION	U.S.A.	2120	1.725	714.7	727.6
CEVA SANTE ANIMALE	France	2120	1.363	709.0	664.6
ZENTIVA, K.S.	Czech Rep.	2120	1.010	708.0	714.5
EMCURE PHARMACEUTICALS LIMITED	India	2120	n/a	706.0	621.0
UNILAB INC	Philippines	2110	n/a	705.8	710.1
ITALFARMACO S.P.A.	Italy	2120	3.192	703.7	738.5
PZ CUSONS PLC	U.K.	2041	3.152	700.2	777.9
PYRAMAL ENTERPRISES LIMITED	India	2120	353	687.9	847.7
SIMPLY GOOD FOODS COMPANY (THE)	U.S.A.	2110	263	684.0	474.6
MERLE NORMAN COSMETICS INC	U.S.A.	2042	510	669.9	n/a
BIO-TECHNE CORPORATION	U.S.A.	2120	2.600	659.7	627.4
AMERICAN INTERNATIONAL INDUSTRIES INC	U.S.A.	2042	22	654.4	n/a
HAYAT KIMYA SANAYI ANONIM SIRKETI	Turkey	2041	n/a	651.2	728.4
IMPERIAL CHEMICAL INDUSTRIES LIMITED	U.K.	2030	585	646.3	669.3
ZAMBON S.P.A.	Italy	2100	2.398	644.9	729.1
VIMEDIMEX MEDI-PHARMA JOINT STOCK COMPANY	Vietnam	2120	1.835	639.2	701.2
PETIQ, INC.	U.S.A.	2120	2.034	635.7	631.5
PT TIME SCAN PACIFIC TBK	Indonesia	2120	5.190	633.7	704.0
IPCA LABORATORIES LIMITED	India	2120	14.574	630.6	565.3
SERVIER (IRELAND) INDUSTRIES LIMITED	Ireland	2110	394	627.0	586.2
BAXTER HEALTHCARE LIMITED	U.K.	2110	1.552	626.1	621.2
ALEMBIC PHARMACEUTICALS LIMITED	India	2120	12.160	625.9	557.8
OPUS GLOBAL NYLVANOSAN MUKODO RESZVENYTARSASAG	Hungary	2110	3.083	619.5	886.6

Company name	Country	NACE code	No. of Employees	2020 Turnover	2019 Turnover
FABBRICA ITALIANA LAPIS ED AFFINI S.P.A. F.I.L.A.	Italy	2030	8.070	615.8	689.4
PIONEER UK MIDCO 1 LIMITED	U.K.	2110	3.423	595.7	534.8
IONIS PHARMACEUTICALS, INC.	U.S.A.	2120	757	594.3	999.3
F.I.S. FACTORY ITALIANA SINTETICI S.P.A.	Italy	2110	1.786	589.4	507.0
KANSAI NEROLAC PAINTS LIMITED	India	2030	2.889	586.8	637.3
PT KIMIA FARMA (LOST) TBK	Indonesia	2120	11.891	586.4	614.9
BALCHEM CORP	U.S.A.	2110	1.342	573.4	573.0
EVOTEC SE	Germany	2120	3.572	573.1	522.9
DECHRA PHARMACEUTICALS PLC	U.K.	2120	1.945	564.4	537.2
LAURUS LABS LIMITED	India	2120	4.492	558.4	343.0
DOMPE' FARMACEUTICI - S.P.A.	Italy	2120	380	555.1	443.6
PHARMANIAGA BERHAD	Malaysia	2120	3.603	553.6	613.6
CLINIGEN GROUP PLC	U.K.	2120	1.013	552.6	509.4
ROBERTET SA	France	2042	2.000	542.7	559.7
AMARIN PHARMACEUTICALS IRELAND LIMITED	Ireland	2110	6	537.6	383.9
MEDIKA D.D.	Croatia	2120	899	529.6	488.2
INDIVIOR PLC	U.K.	2120	796	527.3	698.8
BOIRON	France	2110	3.344	514.8	558.8
FERRING GMBH	Germany	2120	401	513.4	509.0
DISTRIBUTION AMERICA INC	U.S.A.	2030	28	503.6	n/a
AAH PHARMACEUTICALS LIMITED	U.K.	2110	3.005		4,052.2
TAKEDA GMBH	Germany	2110	1.789		2,006.3
BOEHRINGER INGELHEIM VETMEDICA GMBH	Germany	2120	570		1,893.3
DAW SE	Germany	2030	5.898		1,452.8
ANTONIO PUIG SAU	Spain	2042	1.580		1,176.2
DALLI-WERKE GMBH & CO. KG	Germany	2040	2.043		863.2
OQEMA AG	Germany	2110	291		817.6
VETTER PHARMA-FERTIGUNG GMBH & CO. KG	Germany	2110	4.580		668.5
OMNICARE BETEILIGUNGEN GMBH	Germany	2120	148		609.7
AKORN INC	U.S.A.	2120	2.227		607.5
BRILLUX GMBH & CO. KOMMANDITGESELLSCHAFT	Germany	2030	2.824		551.3
MEDAC GESELLSCHAFT FUER KLINISCHE SPEZIALPRAEPARATE M.B.H.	Germany	2120	1.780		535.8
MICRO LABS LIMITED	India	2120	n/a		529.1
ASTELLAS PHARMA GMBH	Germany	2100	274		520.9

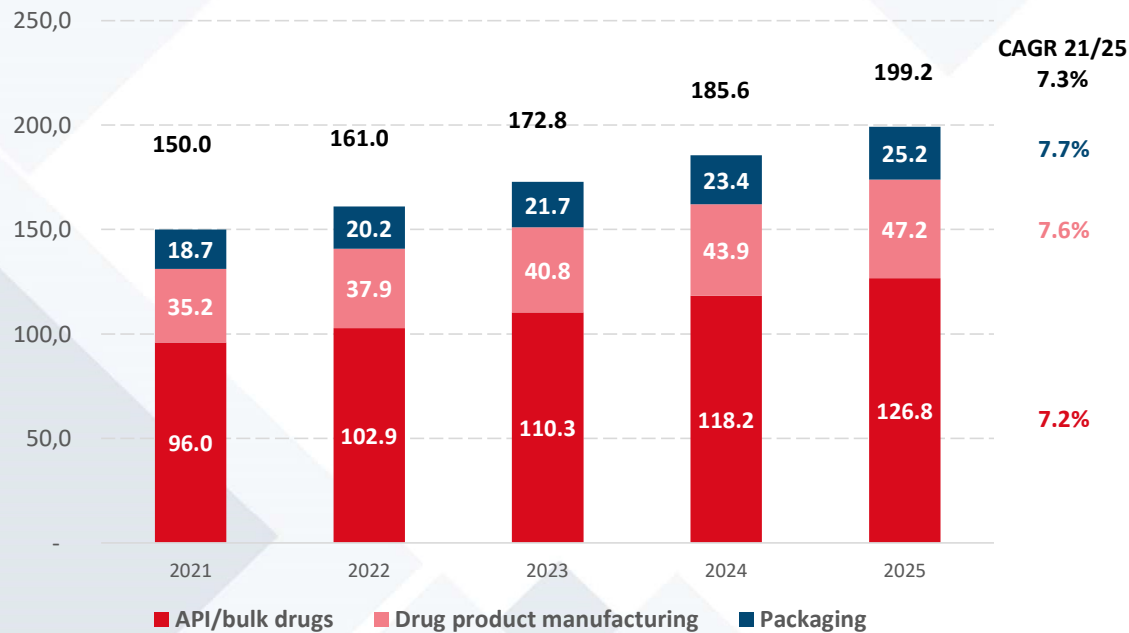
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CMO, CDMO, CRO

Contract Operations, Contract Development and Manufacturing Operations, Contract Research Operations
Manufacturing

Total CDMO market value (billion Euro) and CAGR 21/25

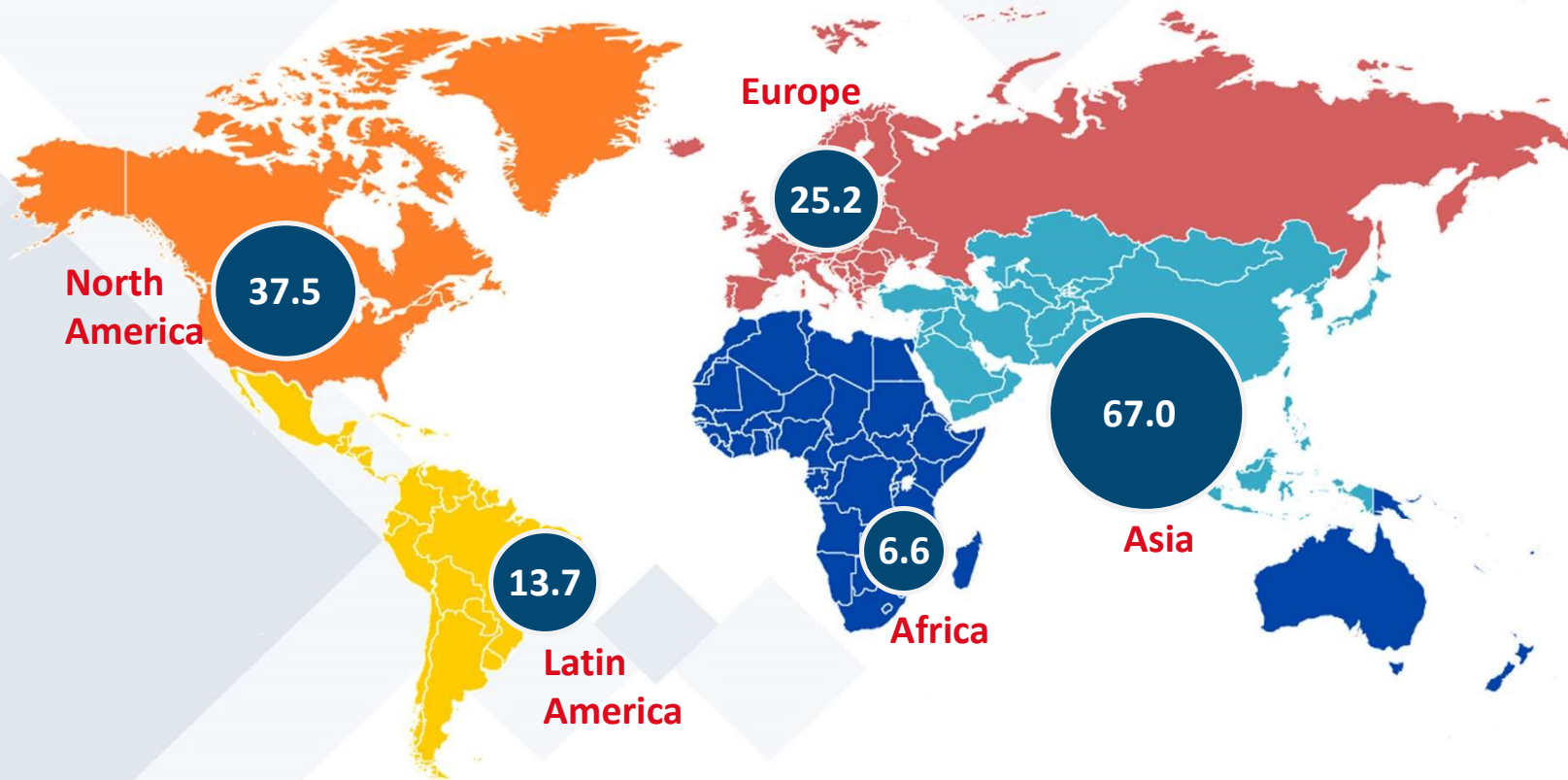


The global **pharmaceutical contracting** market (CMOs, CDMOs and CROs) is worth **150 billion Euro** in 2021 and is expected to grow at an average annual rate of 7.3% to reach 199.2 billion Euro in 2025. Within the category, the predominant share is occupied by APIs (Active Pharmaceutical Ingredients), with a total value of 96 billion Euro, growing at a CAGR of 7.2% to 126.8 billion Euro in 2025.

CMO, CDMO, CRO

Contract Operations, Contract Development and Manufacturing Operations, Contract Research Operations Manufacturing

Total CDMO market value (billion Euro) per area in 2021



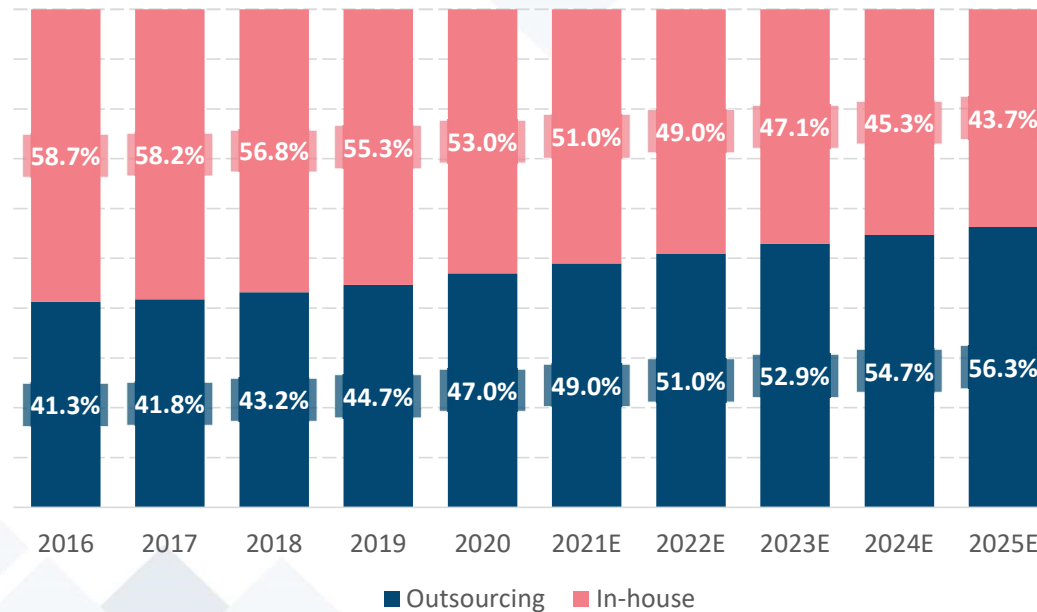
Asia contributes 44.7% of the global pharmaceutical contracting market, followed by North America with 25% and Europe (with 16.8%).

CMO, CDMO, CRO

Contract Operations, Contract Development and Manufacturing Operations, Contract Research Operations
Manufacturing

Total CRO outsourcing rate in the USA

Not only is the share of production that pharmaceutical companies outsource steadily and sharply increasing over the years, but outsourcing of research and development activities has recorded and will record a similar dynamic: alongside the trend expected in the cradle of big Pharma, the United States.



CMO, CDMO, CRO

Contract Operations, Contract Development and Manufacturing Operations, Contract Research Operations
Manufacturing

Main CMO, CDMO, CRO companies worldwide

Abbvie Inc
Aenova Holding GmbH
Albany Molecular Research Inc.
Almac Group Ltd
Amatsigroup
Apollo 5 GmbH
Baxter Biopharma Solutions
Biofarma Srl
BioVectra
Boehringer Ingelheim Group
C.O.C. Pharmaceuticals
Cambrex Corporation
Catalent Inc.
Consort Medical
Corden Pharma GmbH
Delpharm
DPT Laboratories Ltd
Eurofins Scientific
Evonik Industries AG
Fabbrica Italiana Sintetici S.p.A
FAMAR Health Care Services
Dova SA
Fujifilm Dyosynth Biotechnologies
Jubilant Life Sciences Ltd.
Lonza Group Ltd
NextPharma Technologies

Patheon Inc.
Pfizer Centresource
Piramal Pharma Solutions
Recipharm AB
Samsung Biologics Co. Ltd.
Siegfried Holding AG
Strides Pharma Science Limited
Thermo Fisher Scientific, Inc.
Unither
Vetter Pharma International GMBH
WuXi AppTec Inc.
CMIC Holdings Co. Ltd.
Covance Inc.
Hangzhou Tigermed Consulting Co. Ltd.
IQVIA Holdings Inc.
LSK Global Pharma Service Co. Ltd.
Novotech Pty. Ltd.
PAREXEL International Corporation
Pharmaceutical Product Development LLC
PRA Health Sciences Inc.
Quanticate Ltd.
Sagimet Biosciences (3V Biosciences Inc.)
Samsung Bioepis Co. Ltd.
SGS Life Science Services SA
Syneos Health Inc.
WuXi AppTec Inc.

API: Market and Trends

The worldwide market for APIs (Active Pharmaceutical Ingredients), which make up the majority of the active ingredients of drugs, has already been mentioned, highlighting that, with over 90 billion Euro, they make up the majority of CMO and CDMO production. However, an almost equal value of these active ingredients is produced on their own account by sector companies, with a particular concentration in companies that produce a high proportion of generics. Overall, global API production will amount to approximately **180 billion Euro** in 2021, with **expected growth** of between **6.5%** and 7% on average per year between 2021 and 2025. The main producing countries are certainly **China** and **India**, with the latter, in turn, importing a high proportion of the raw material for its production (API or pharmaceutical) from China. Recently, as a result of the “power crunch” suffered by Chinese industry in late 2021, many global manufacturers have expressed the need to limit dependence on Chinese production, even though, in terms of cost, Chinese API exports are still, for the time being, very difficult to replace.

The global API market is fragmented between large, dominant global manufacturers (which not only produce but also develop and lead the approval of new molecules), and a large cohort of **more than 10,000 medium- and small-sized companies** that, in part, produce their own (35-40%), and for the remaining part they produce for third parties (as CMOs or CDMOs).

Top players globally (ordered by importance in terms of number of active ingredients):

TAPI (Teva Active Pharmaceutical Ingredients) - Israel

Aurobindo Pharma - India

Cipla, Inc. - India

Sun Pharmaceutical Industries Ltd. - India

Ranbaxy Laboratories - India

Xianju Pharma - China

Huahai Pharmaceutical - China

Dr. Reddy's Laboratories Ltd. - India

Tianyu Pharma - China

Jiuzhou Pharmaceutical - China

Sandoz (Novartis) - Austria

Ningbo Menovo Pharmaceutical - China

Other global players: AbbVie, Boehringer Ingelheim

International, Bristol-Myers Squibb, Merck & Co, and Viatrix.

Digitisation and AI

The transformation of the economic system in the direction of greater digitalisation of processes, products, growth of data that accompany the evolution and, last but not least, the relationship, more and more digitised, between the various stages of the drug supply chain and up to final consumers, is here to stay. This source of change in the ways of designing, producing, selling, redesigning, and so on, is, according to all or most of all sector observers, the major shift currently underway.

The new possibilities for companies and consumers to access large collections of data and optimise their management effects and the fulfillment of old and new needs, respectively, are obviously still in progress and, as is often the case, it is anything but uniform:

- some large enterprises have already built and tested significant large infrastructure and organisational investments in AI, Big Data management, and the application of these to innovation, R&D, and strategic planning;
- For many other (often smaller) companies, the current phase is still only exploratory.



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Technologies



Processing & Packaging

- The growth in health care spending and the pharmaceutical market expected in the coming years will in turn drive demand for pharmaceutical and wellness processing & packaging technologies. It is estimated that **the global Pharma technology market will grow** over the next five years at an **average rate of 5.2%** per year to nearly **28 billion Euro in 2025**.
- Among the social dynamics that will have the greatest influence on technological change, it is worth noting, in particular, the sharp increase of the elderly on the total population (it is estimated that over-60 individuals are destined to rise from the current one billion to 2.1 billion people in the next thirty years). The increase in the geriatric segment will result in the prevalence of **chronic diseases and** this will not only increase the demand for pharmaceutical products tout court but will lead to the promotion of **drugs that are easier to take, such as tablets, single-dose liquid solutions and extended-release patches**, over parenteral (injective) drugs and/or drugs that require dosing by the patient.
- As it is happening in all highly specialised mechanical sectors, the request coming from the pharmaceutical industry to the technology manufacturers is to guarantee very high flexibility in size and packaging options and the constant control of each processing phase. The implementation of digital solutions goes hand in hand with investments in increasingly **flexible and modular machinery for the processing and packaging of drugs**, with an increasing replacement effect in the coming years of old standardised equipment for conventional production. Another factor that will have a strong influence on manufacturers pushing the production of on-demand customised machines are the regulations and certifications that pharmaceutical machines must undergo and that change from country to country.
- Both manufacturers and products of technologies for the pharmaceutical industry are not exclusively dedicated to this sector: manufacturers of machines for powder compression, vial filling or inspection work for the pharmaceutical, chemistry and food sectors, and this makes it difficult to measure the size of the market accurately and correctly.

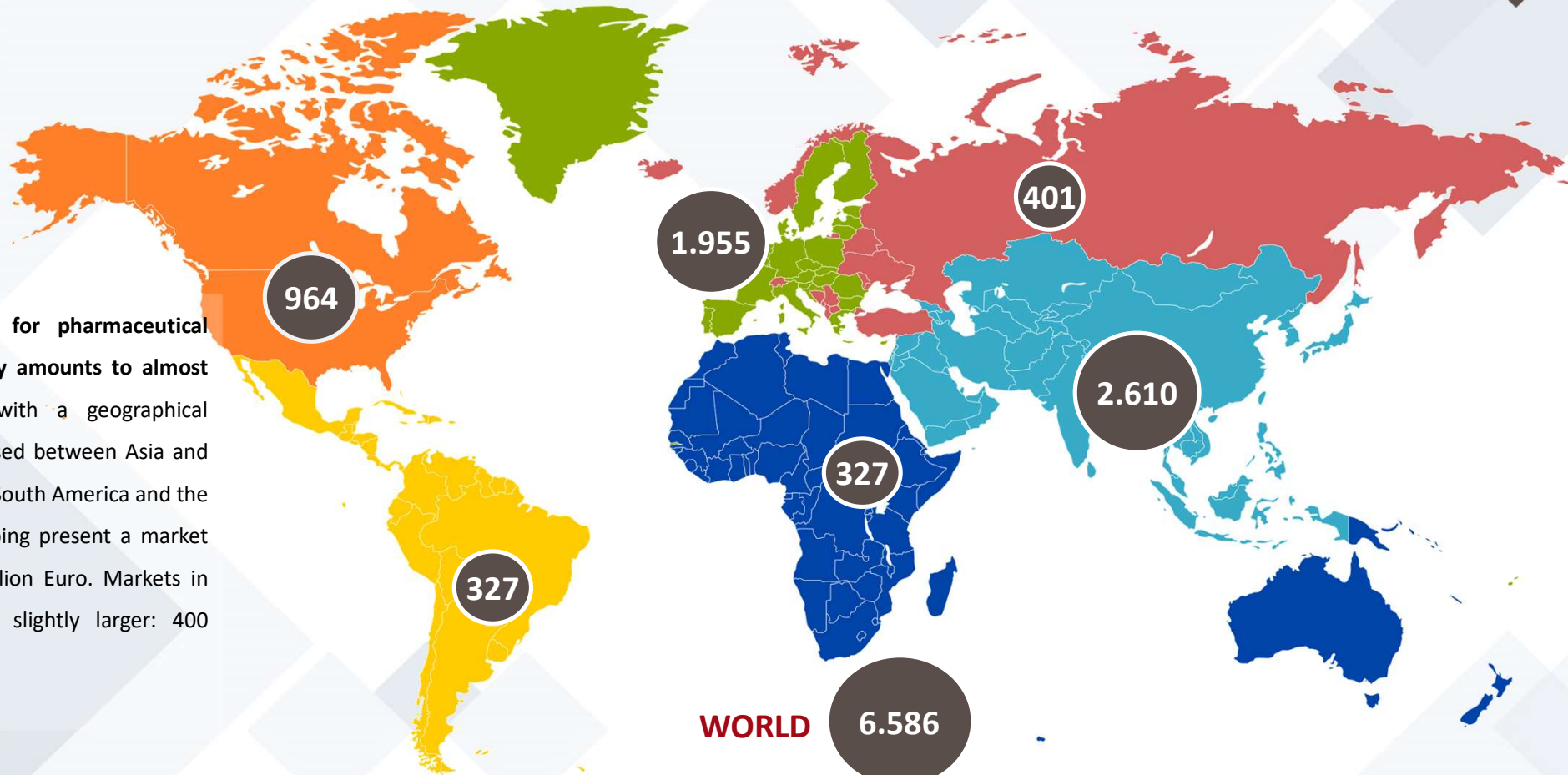
Processing machines

- Within the **Pharma** technology segment, the market for process machines is growing most briskly, estimated to reach **20.1 billion Euro by 2025**. Among the leading producers (below the list of the first 40 producers) stand out the German Gea, Sartorius and Syntegon, the Japanese Shimadzu, the American IDEX Corporation, the Italian Ima, groups with billions of Euros of turnover operating across dozens of sectors, including the pharmaceutical one. Furthermore, **Germany, USA, Japan e Italy** compete in the market of highly specialised technologies also in this segment of capital goods related to pharmaceutical productions. **China and India** produce primarily for their domestic markets.

ACG (India)	Korsch AG (Germany)
ACIC Pharmaceuticals Inc. (USA)	Linxis Group (France)
Antares Vision Spa (Italy)	HRM. S.p.A Automatic Filling Machines (Italy)
Bausch+Ströbel GmbH (Germany)	Maquinaria Industrial Dara SL (Spain)
Beijing Health and Teach Medical Equipment (China)	Marchesini Group Spa (Italy)
Bohle Maschinen und Verfahren GmbH (Germany)	Multivac Group (Germany)
CEA Patents Spa (Italy)	Nicos Group / Nicomac Srl (USA/Italy)
Cadmach Machinery Co. Pvt. Ltd (India)	Optel Group (Canada)
CAM Packaging (Italy)	OPTIMA packaging group GmbH (Germany)
Chinasun Pharmaceutical Machinery Co Ltd (China)	ROMACO Group (Germany)
Coesia Spa (Italy)	Sainty Co (China)
Fette Compacting GmbH (Germany)	Sartorius AG (Germany)
Freund Corporation (Japan)	Sejong Pharmatech (Korea)
GEA Group (Germany)	Shimadzu Corporation (Japan)
Glatt GmbH (Germany)	Shinwa Chemical Industries Ltd (Japan)
Harro Höfliger Verpackungsmaschinen GmbH (Germany)	SK Pharma Machinery Pvt. Ltd. (India)
I.M.A. Spa (Italy)	Syntegon Technology GmbH (Germany)
IDEX Corporation (USA)	Tecnomaco Italia SRL (Italy)
Jekson Vision Pvt. Ltd. (India)	Shanghai Tofflon Science and Technology Co. Ltd. (China)
Kevin Process Technologies Pvt. Ltd. (India)	Truking Technology Limited (China)
Kikusui Seisakusho Ltd. (Japan)	Uhlmann Pac-Systeme GmbH & Co. KG (Germany)
Körber AG (Germany)	Wenzhou Trustar Machinery Technology Co.Ltd (China)

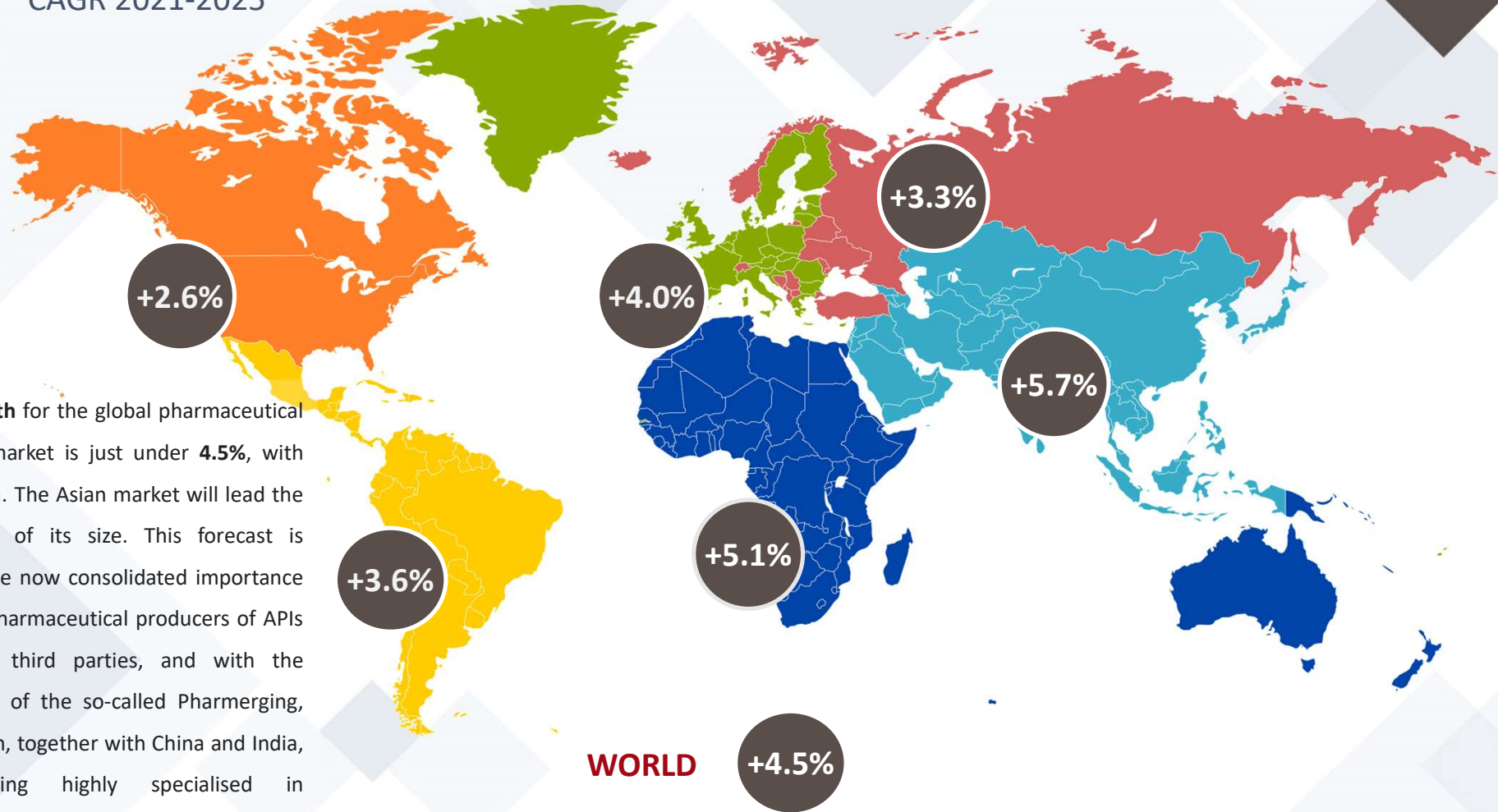
Packaging machines: Market value 2021 (in mln Euro)

The world market for pharmaceutical packaging machinery amounts to almost 6.6 billion Euro, with a geographical concentration polarised between Asia and Europe. Central and South America and the Africa-Oceania grouping present a market of just over 300 million Euro. Markets in non-EU Europe are slightly larger: 400 million Euro.



Packaging machines:

CAGR 2021-2025



Projected annual growth for the global pharmaceutical packaging machinery market is just under **4.5%**, with peaks in Africa and Asia. The Asian market will lead the way, in part because of its size. This forecast is consistent with both the now consolidated importance of China and India as pharmaceutical producers of APIs and/or on behalf of third parties, and with the progressive emergence of the so-called Pharmerging, namely countries, which, together with China and India, are rapidly becoming highly specialised in pharmaceutical sector production.

Packaging machines:

Country data: market in 2021 (in mln euro) and CAGR 21/25

Ranking: 2021-2025 new market	Country	2021 Market	2025 Expected market	Additional Market	CAGR 21-25 Total Market
1	China	993.2	1,362.49	369.29	8.22%
2	Italy	422	602.50	180.50	9.31%
3	United States	828.6	925.13	96.53	2.79%
4	Japan	537.8	607.73	69.93	3.10%
5	France	266.5	333.18	66.68	5.74%
6	Spain	180.3	225.41	45.11	5.74%
7	Turkey	104.5	133.74	29.24	6.36%
8	Thailand	61.1	88.23	27.13	9.62%
9	Russia	123.7	149.27	25.57	4.81%
10	Indonesia	90.8	115.53	24.73	6.21%

The expected growth of the world market for pharmaceutical packaging machinery makes it possible to evaluate the size of the market spaces that will open up in the various countries and that can be covered by local production or by imports from the largest or most competitive world producers (predominantly, Italy and Germany).

New business opportunities worth nearly 370 million Euro will open up in China between now and 2025 for pharmaceutical packaging manufacturers. Italy follows with over 180 million Euro of new market. Other significant market spaces will be created in the USA, Japan, France and Spain.

Packaging machines:

Country data: market in 2021 (in mln Euro) and CAGR 21/25

Ranking: 2021-2025 new market	Country	2021 Market	2025 Expected market	Additional Market	CAGR 21-25 Total Market
11	Brazil	90.9	112.98	22.08	5.59%
12	Vietnam	50.4	69.94	19.54	8.53%
13	India	267.5	284.49	16.99	1.55%
14	South Korea	116.6	133.36	16.76	3.41%
15	Belgium	49.6	66.49	16.89	7.60%
16	Switzerland	37.5	54.46	16.96	9.78%
17	Germany	399.7	414.79	15.09	0.93%
18	Sweden	100.7	113.79	13.09	3.10%
19	Australia	87.8	98.62	10.82	2.95%
20	Romania	32.3	43.05	10.75	7.45%
21	Mexico	83.3	93.57	10.27	2.95%
22	Canada	135.6	145.10	9.50	1.71%
23	Algeria	30.2	40.02	9.82	7.29%
24	Saudi Arabia	29.7	38.01	8.31	6.36%
25	Austria	57.1	64.53	7.43	3.10%

Ranking: 2021-2025 new market	Country	2021 Market	2025 Expected market	Additional Market	CAGR 21-25 Total Market
26	Portugal	25.7	33.47	7.77	6.83%
27	Malaysia	30.5	37.46	6.96	5.28%
28	Pakistan	15.2	22.58	7.38	10.40%
29	Hong Kong	16.9	24.13	7.23	9.31%
30	Iran	20.5	27.01	6.51	7.14%
31	Slovenia	11	15.53	4.53	9.00%
32	Croatia	12.2	15.98	3.78	6.98%
33	Ukraine	20.5	24.16	3.66	4.19%
34	Denmark	45.5	48.39	2.89	1.55%
35	Egypt	28.8	31.77	2.97	2.48%
36	Philippines	31.4	34.22	2.82	2.17%
37	Taiwan	49.4	52.22	2.82	1.40%
38	Ireland	27.9	30.59	2.69	2.33%
39	Kazakhstan	8.3	10.44	2.14	5.90%
40	Greece	21.9	23.87	1.97	2.17%

Packaging machines:

Country data: market in 2021 (in mln Euro) and CAGR 21/25

Ranking: 2021-2025 new market	Country	2021 Market	2025 Expected market	Additional Market	CAGR 21-25 Total Market
41	Israel	30.8	32.76	1.96	1.55%
42	Chile	20.7	22.15	1.45	1.71%
43	Morocco	11	11.91	0.91	2.02%
44	Venezuela	1.4	2.32	0.92	13.50%
45	Belarus	9.8	10.42	0.62	1.55%
46	Finland	22.4	22.96	0.56	0.62%
47	Tunisia	9.2	9.72	0.52	1.40%
48	Rep. Czech	27.4	27.91	0.51	0.47%
49	Cyprus	2.8	3.16	0.36	3.10%
50	Estonia	2.8	2.98	0.18	1.55%
51	Norway	20.8	20.93	0.13	0.16%
52	Malta	0.9	1.05	0.15	3.88%
53	Bulgaria	12.8	12.72	-0.08	-0.16%
54	Colombia	22.9	22.62	-0.28	-0.31%
55	Lithuania	6.5	6.14	-0.36	-1.40%

Ranking: 2021-2025 new market	Country	2021 Market	2025 Expected market	Additional Market	CAGR 21-25 Total Market
56	Latvia	1.9	1.50	-0.40	-5.74%
57	Kenya	5.3	4.73	-0.57	-2.79%
58	Luxembourg	3.7	2.83	-0.87	-6.52%
59	UAE	23.2	22.07	-1.13	-1.24%
60	Singapore	15.3	14.19	-1.11	-1.86%
61	United Kingdom	161.2	160.20	-1.00	-0.16%
62	Peru	12.1	10.73	-1.37	-2.95%
63	Hungary	29.1	27.51	-1.59	-1.40%
64	Slovakia	11.4	9.73	-1.67	-3.88%
65	Jordan	6.3	4.62	-1.68	-7.45%
66	South Africa	31.7	29.78	-1.92	-1.55%
67	Nigeria	19.2	15.97	-3.23	-4.50%
68	Argentina	42.9	35.22	-7.68	-4.81%
69	The Netherlands	69.3	61.09	-8.21	-3.10%
70	Poland	106.2	90.07	-16.13	-4.03%

Packaging machines:

Forecast 2021-2025 TECHNOLOGIES (2025 figure mln Euro)

	Total 2021	Total 2025	CAGR 21/25
Filling machines	1,125.1	1,349.7	4.7%
Sealing Machines	123.1	152.1	5.4%
FS machines	609.0	692.3	3.3%
SBB	1,396.4	1,685.2	4.8%
Cartoning machines	497.8	590.2	4.3%
Stretch wrapping machines	222.3	266.7	4.7%
Palletisers	564.6	685.3	5.0%
Labellers	544.2	603.9	2.6%
Manipulators	208.8	253.5	5.0%
Inspecting Machines	1,080.1	1,272.8	4.2%
Other Technologies	212.6	296.7	8.7%
Total	6,587.0	7,855.2	4.5%

Packaging machines:

Forecast 2021-2025 TECHNOLOGIES (2025 figure mln Euro)

	EU	Europe Extra EU	North America	Central-South America	Africa and Oceania	Asia	Total
Filling machines	448.11	80.73	119.73	76.10	56.48	568.29	1349.66
Sealing Machines	47.97	6.27	35.70	6.61	7.35	48.02	152.05
FS machines	190.85	30.84	112.61	31.72	36.05	287.89	692.29
SBB	504.03	105.71	189.32	94.52	77.67	715.69	1685.16
Cartoning machines	120.39	22.31	103.83	30.17	47.33	270.14	590.18
Stretch wrapping machines	71.81	9.14	20.06	9.79	14.55	142.08	266.73
Palletisers	192.92	42.46	127.55	24.15	28.62	268.41	685.35
Labellers	138.28	27.93	141.23	28.00	39.42	233.01	603.92
Manipulators	51.95	9.96	98.53	10.62	9.93	72.13	253.47
Inspecting Machines	419.46	111.13	89.87	53.99	66.94	533.79	1272.83
Other Technologies	110.31	11.70	30.58	10.27	16.48	118.22	296.71
Total	2289.71	455.23	1070.75	377.02	399.66	3263.36	7855.16

Packaging machines:

Forecast 2021-2025 TECHNOLOGIES: CAGR 21-25

	EU	Europe Extra EU	North America	Central-South America	Africa and Oceania	Asia	Total
Filling machines	5.0%	2.8%	3.1%	5.4%	1.6%	5.3%	4.7%
Sealing Machines	9.8%	2.9%	1.7%	2.8%	7.3%	5.1%	5.4%
FS machines	2.0%	-2.0%	2.6%	1.7%	4.7%	5.0%	3.3%
SBB	4.3%	4.0%	3.6%	6.1%	1.7%	5.9%	4.8%
Cartoning machines	-1.7%	-2.9%	4.0%	4.3%	13.2%	7.9%	4.3%
Stretch wrapping machines	6.5%	-2.3%	2.2%	0.8%	7.8%	4.8%	4.7%
Palletisers	7.1%	7.1%	1.7%	-0.5%	4.5%	5.4%	5.0%
Labellers	-1.7%	-0.8%	2.0%	2.0%	8.7%	6.4%	2.6%
Manipulators	6.2%	4.2%	4.7%	1.4%	6.2%	5.0%	5.0%
Inspecting Machines	4.0%	7.4%	-1.6%	1.7%	5.1%	5.1%	4.2%
Other Technologies	11.9%	3.1%	6.2%	2.5%	11.2%	7.8%	8.7%
Total	4.0%	3.3%	2.6%	3.6%	5.1%	5.7%	4.50%



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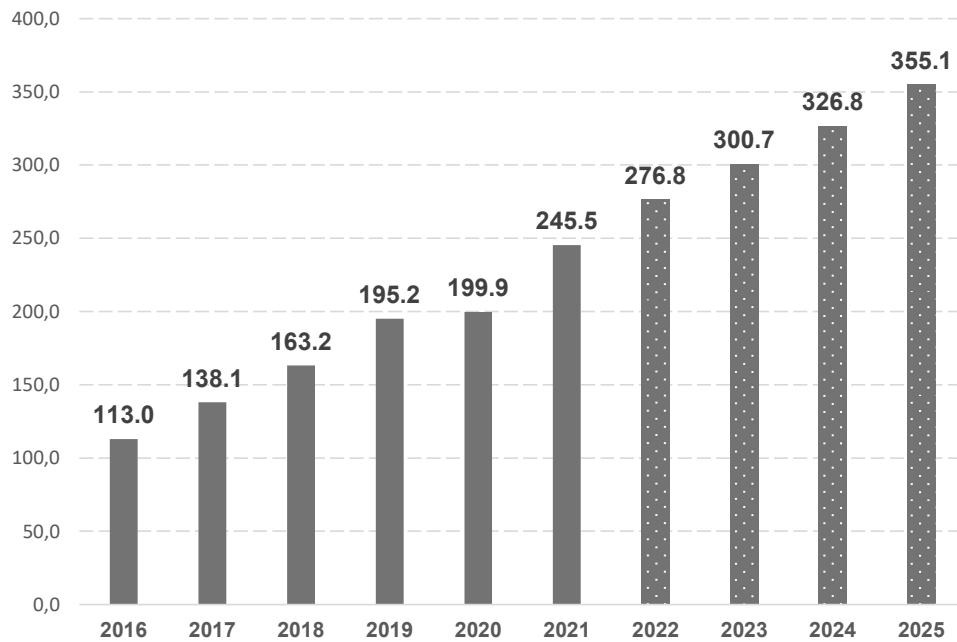
LIFE SCIENCES
Nutraceuticals,
Cosmeceuticals, Biomedical,
Medical Devices, Biotech



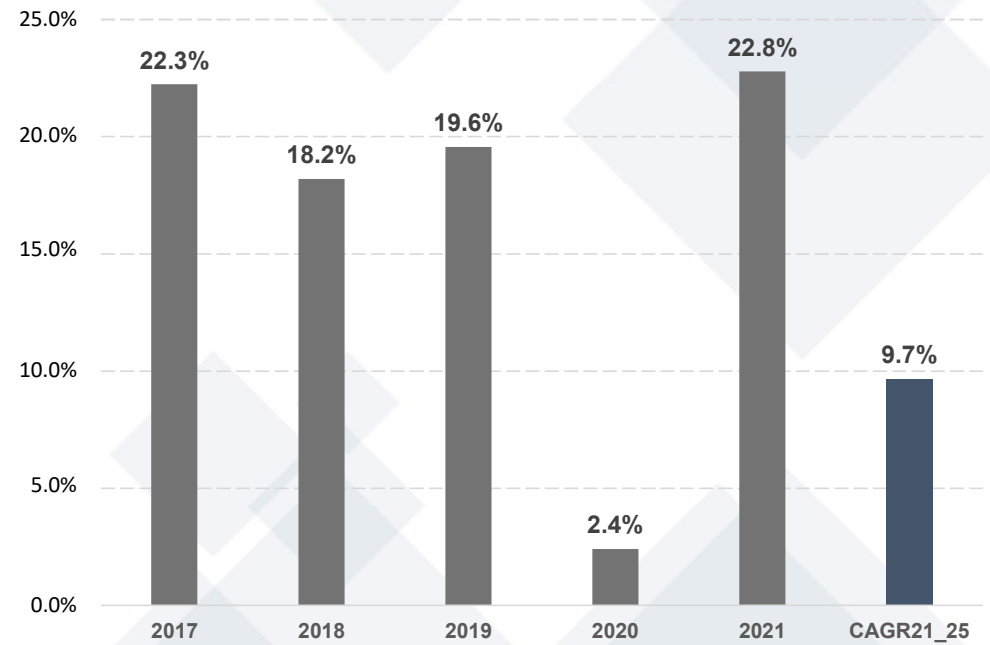
Nutraceuticals

Total world expenditure and CAGR 2021/2025

Total global expenditure, Bln Euro



Annual % variation and CAGR 2021-2025

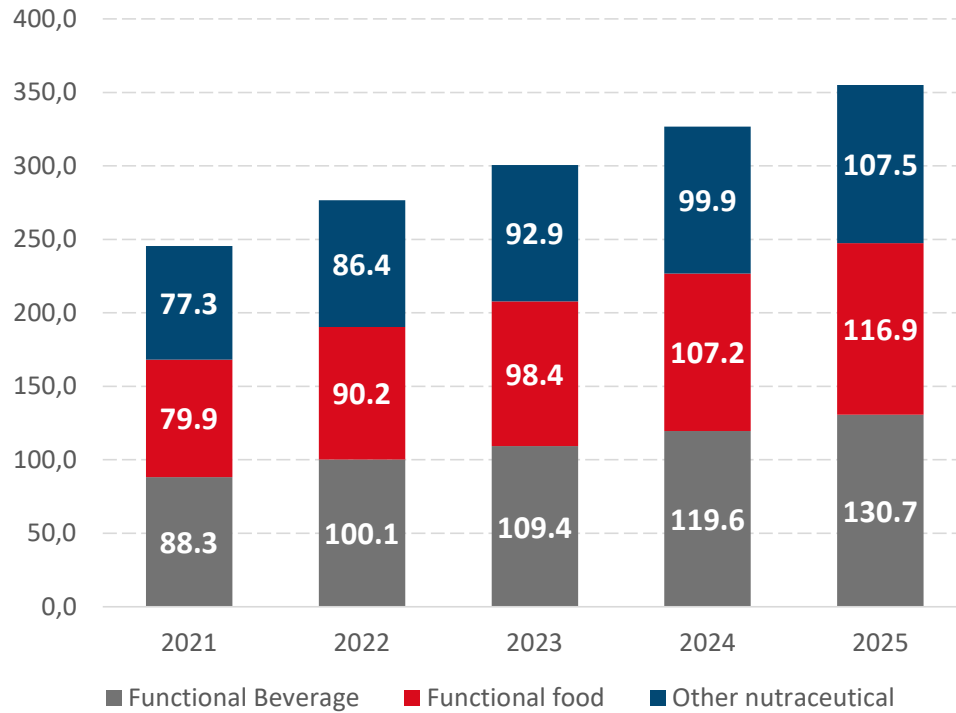


Within the broad class of Life Sciences, spending on **Nutraceuticals** (Food and Beverage supplements, vitamin and herbal supplements, etc.) constitutes a demand that is not particularly significant in terms of value, but is characterised by high growth: the **CAGR 2021-25 is just under 10%**. The slowdown in consumption was very significant in 2020, but the recovery in sales in 2021 allowed the pandemic-related slowdown to fully recover.

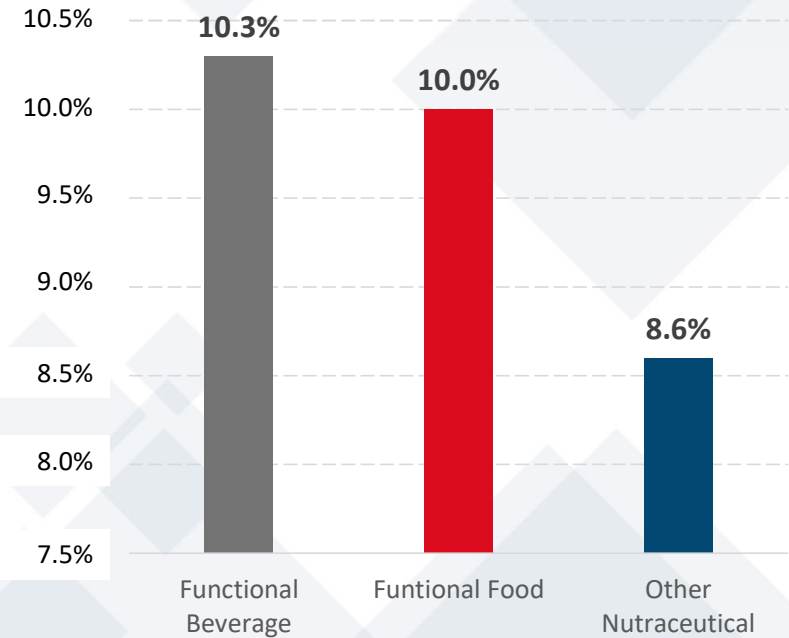
Nutraceuticals

Segment size and CAGR 2021/2025

Total global expenditure, Bln Euro



CAGR 2021/2025

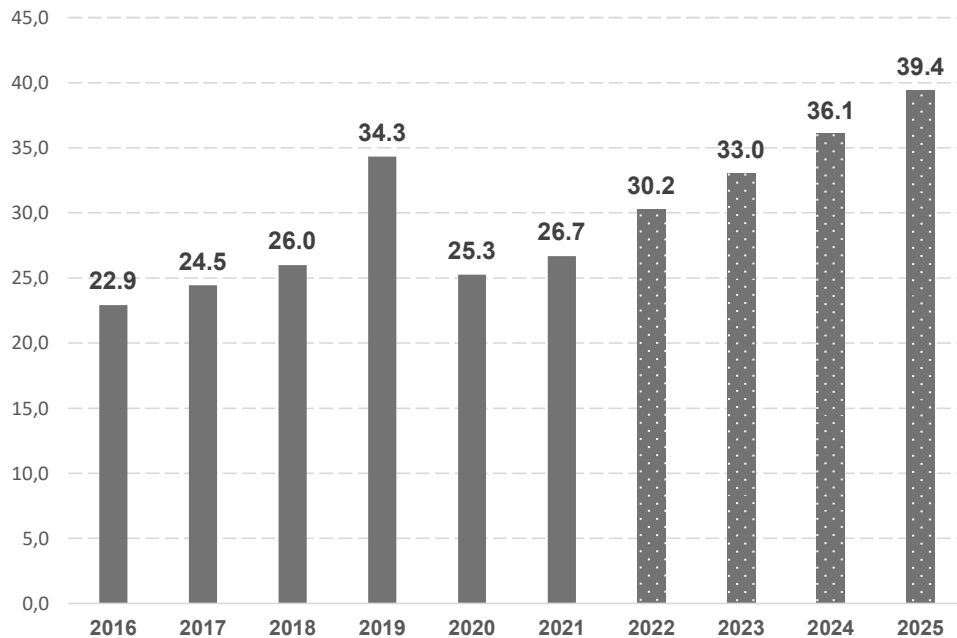


The expected growth of the Nutraceuticals segment, consisting of vitamin supplements, herbal medicines and other preparations, is slightly lower than that of the two “functional food” and “functional beverage” segments, because it is a segment that is already more traditional than nutraceuticals and, therefore, suffers from a higher degree of penetration in consumer baskets and greater product maturity.

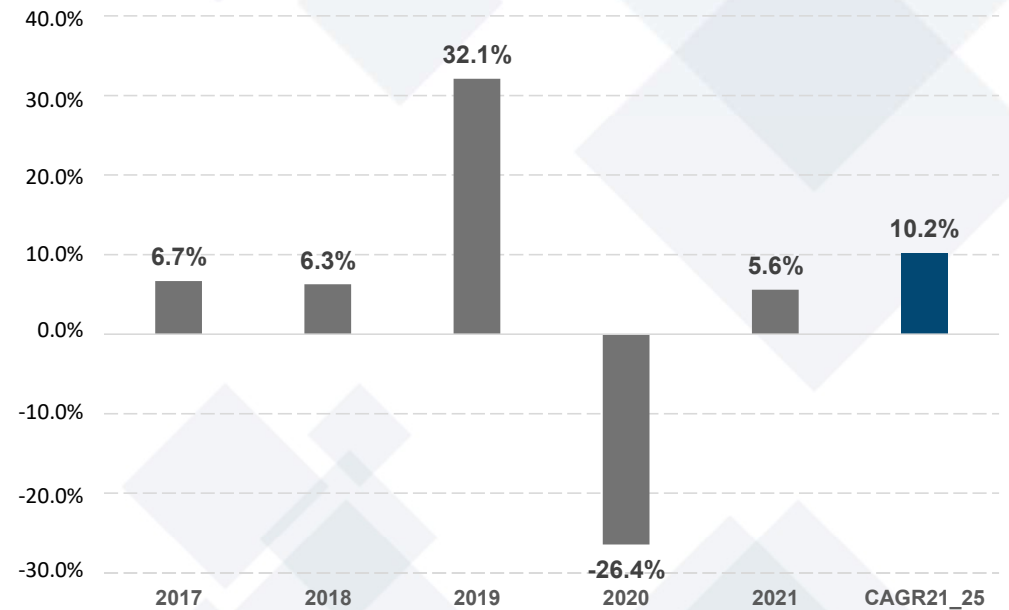
Cosmeceuticals

Total worldwide and CAGR

Total global expenditure, Bln Euro



Annual % variation and CAGR 2021-2025

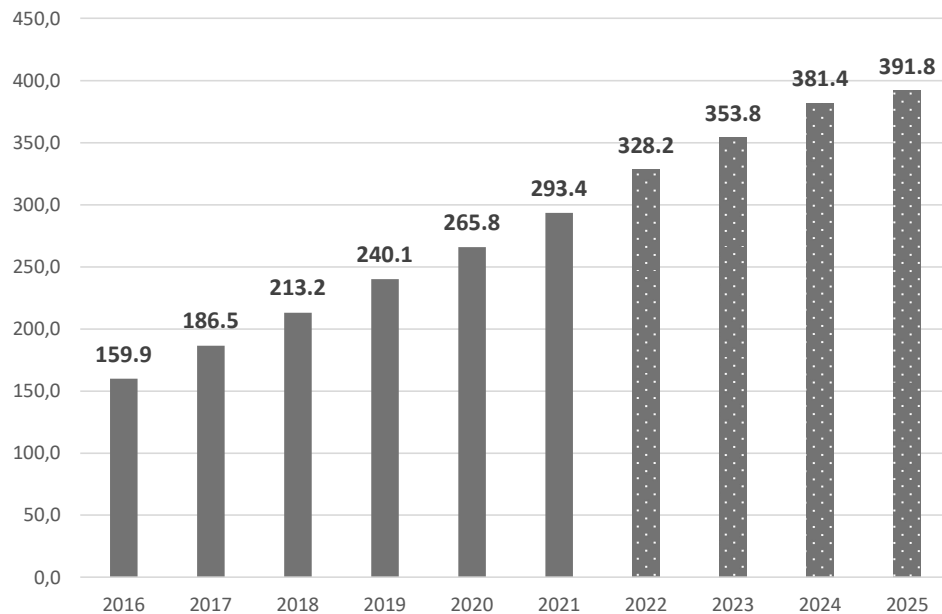


The **Cosmeceuticals** segment, after a 2019 marked by strong sales growth, showed a sharp setback in 2020, driven by lockdown impositions and mandatory use of personal protective equipment. These two temporary effects have jointly determined the fall (-26%) in consumption, more concentrated in the “make-up” and cosmetics segment in the strict sense, rather than in the anti-ageing preparations segment. With changed circumstances in 2021 and the easing of pandemic restrictions, we see a gradual return to growth, with excellent prospects between now and 2025 with a **CAGR of +10%**.

Biomedical (medical devices)

World total and CAGR 2021/2025

Total global expenditure, Bln Euro



Annual % variation and CAGR 2021-2025

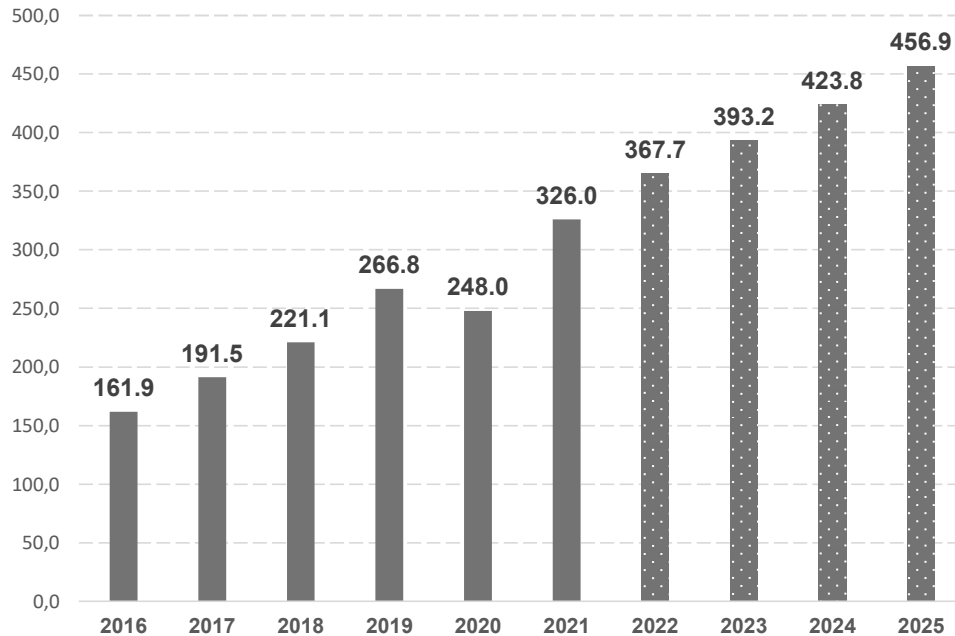


During the pandemic, the **biomedical equipment and supplies** segment was impacted by two contrasting forces at a global level: on the one hand, there was a huge increase in demand for personal protective equipment, both technical and for the general public, for respirators, saturation meters and respiratory aids, for intensive care equipment, for reagents and diagnostic tests; on the other hand, sales of so-called “aesthetic medical devices” - prostheses for cosmetic surgery, orthodontic appliances and body treatments - fell sharply. In addition, the slowdown in standard hospital operations decreased demands for prosthetics and surgical equipment. Overall, the two trends offset each other, leading to a near invariance of the trend in the most acute phases of the pandemic, which will again give way in the coming years to a **consistent growth**, estimated in the order of **+7.5% per year until 2025**.

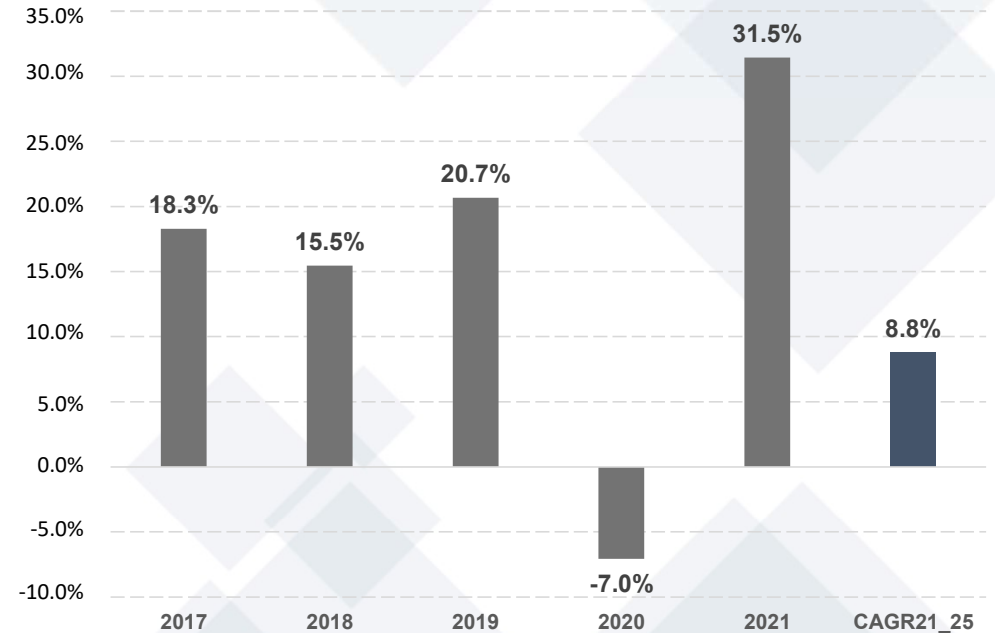
Biotech

Total worldwide and CAGR 2021/2025

Total global expenditure, Bln Euro



Annual % variation and CAGR 2021-2025



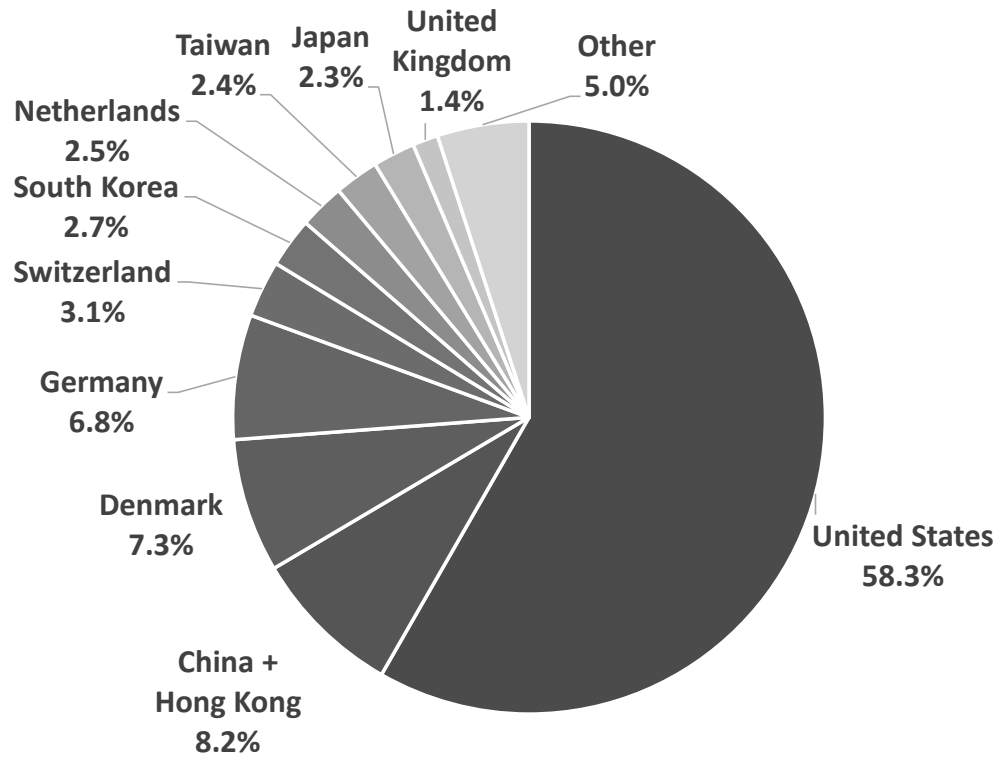
The research and use of biotechnology has produced revolutionary changes not only in genetic research but also in the pharmaceutical sector: for example, biotechnology has enabled the creation of gene therapies and new medicines for patients suffering from growth, metabolic, multiple sclerosis, rheumatoid arthritis, cancer and Alzheimer's disease.

The **strong growth process of the last five years** suffered a serious setback in 2020, but by 2021 the industry had already more than recovered its previous growth and is **expected to have an average annual growth rate through 2025 of +8.8%**.

Biotech

Main countries

Biotech market value per country



Biotechnology applied to health and pharmaceuticals has led to a great advancement in research and therapies for the treatment of diseases. The US industry has been the undisputed protagonist of this evolution.

The market value of biotechnology is, in fact, mainly concentrated in the United States, which is worth almost 60% of the total worldwide, followed at a considerable distance by China, Denmark, Germany, all with shares below 10%.



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COUNTRY FACT SHEETS



Countries

Argentina
Australia
Austria
Bahrain
Bangladesh
Belarus
Belgium
Brazil
Bulgaria
Canada
Chile
China
Colombia
Croatia
Cuba
Czech Republic
Denmark
Egypt, Arab Rep.
Finland
France
Germany
Ghana
Greece
Hungary

India
Indonesia
Iran, Islamic Rep.
Iraq
Ireland
Israel
Italy
Japan
Jordan
Kenya
Korea, Rep.
Kuwait
Latvia
Lebanon
Lithuania
Malaysia
Mexico
Morocco
Netherlands
New Zealand
Nigeria
Norway
Oman
Pakistan

Peru
Philippines
Poland
Portugal
Qatar
Romania
Russian Federation
Saudi Arabia
Serbia
Singapore
Slovak Republic
Slovenia
South Africa
Spain
Sweden
Switzerland
Thailand
Turkey
Ukraine
United Arab Emirates
United Kingdom
United States
Vietnam



Argentina



Population CAGR 16/20
45,376,763 +1.0%



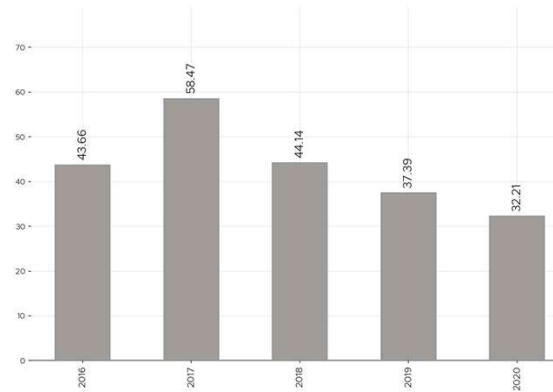
% Over 60
11.4%



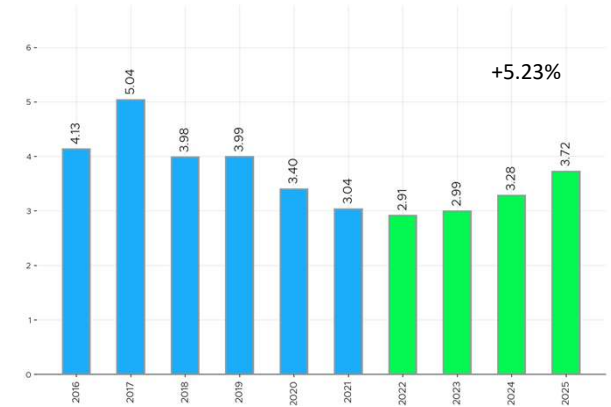
Gdp per capita CAGR 21/25
7,511 € +2.0%

Source: elaboration on data World Bank

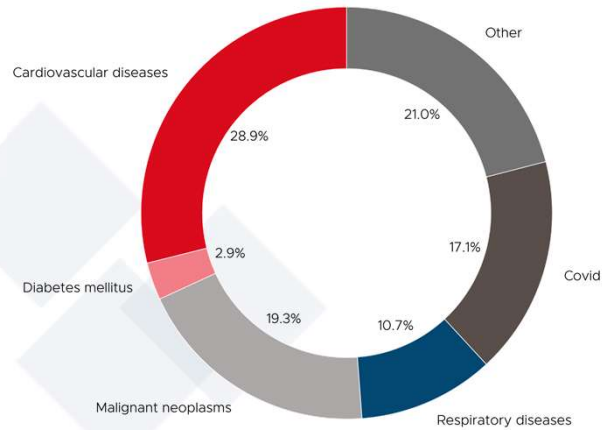
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
37.8 mln €
CAGR 21/25
-3.1%



Australia



Population CAGR 16/20
25,687,041 +1.5%



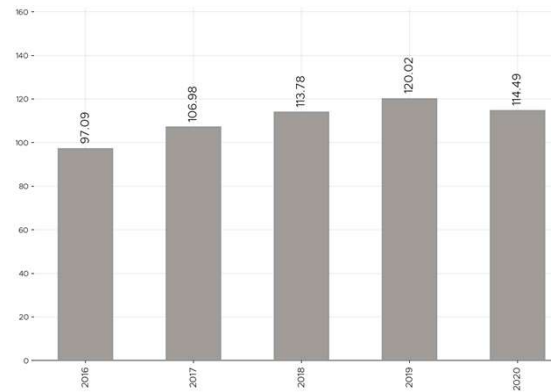
% Over 60
16.2%



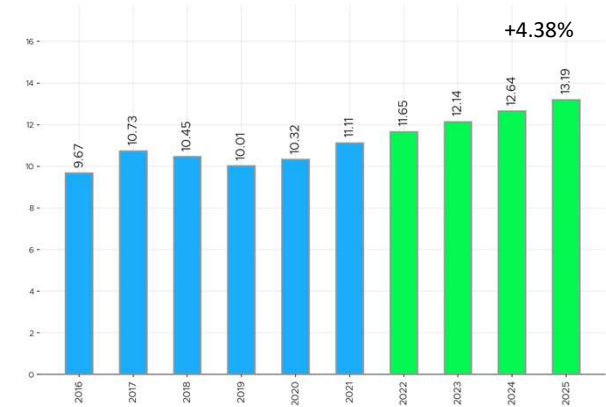
Gdp per capita CAGR 21/25
45,257 € +3.0%

Source: elaboration on data World Bank

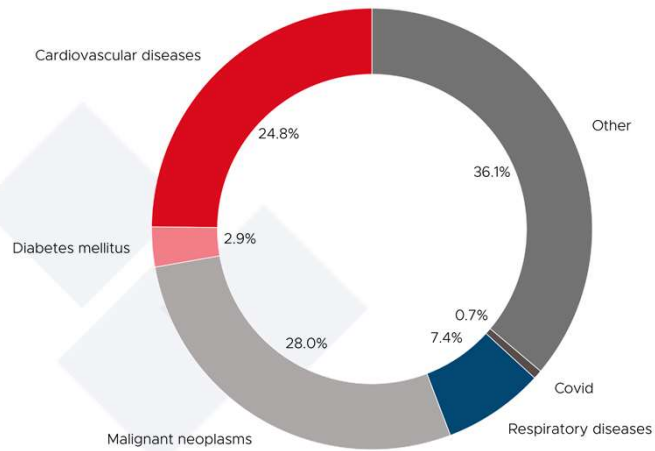
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
94.9 mln €

CAGR 21/25
+1.9%



Austria



Population

8,917,205

CAGR 16/20

+0.5%



% Over 60

19.2%



Gdp per capita

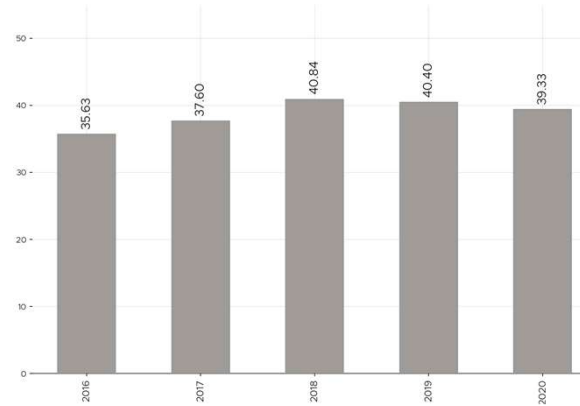
42,538 €

CAGR 21/25

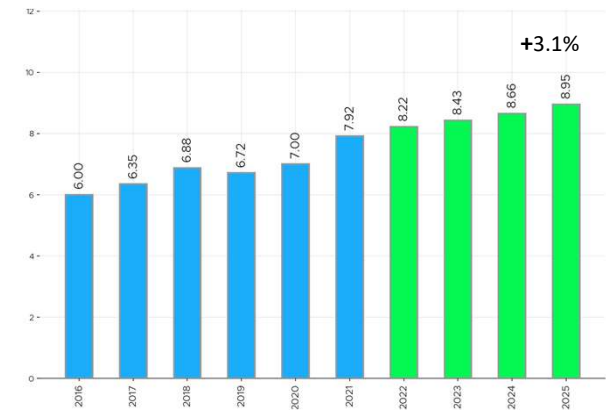
+2.6%

Source: elaboration on data World Bank

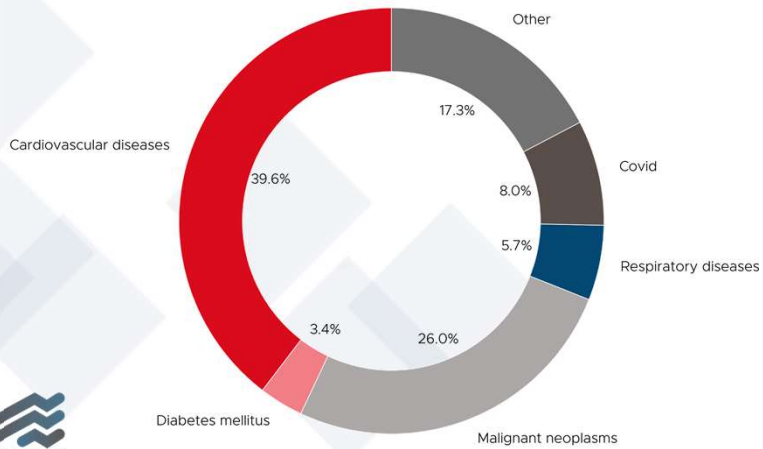
Health Spending (bln €)



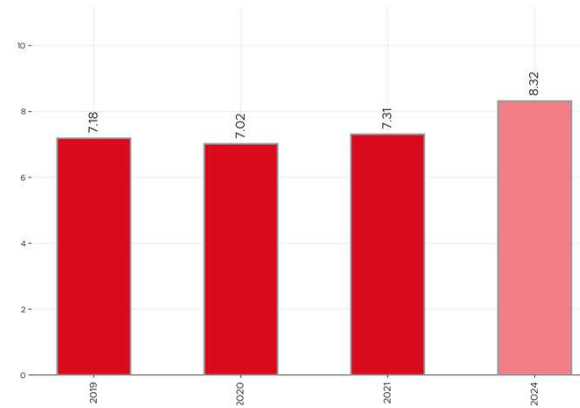
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

61.9 mln €

CAGR 21/25

2.0%



Bahrain



Population CAGR 16/20
1,701,583 **+4.5%**



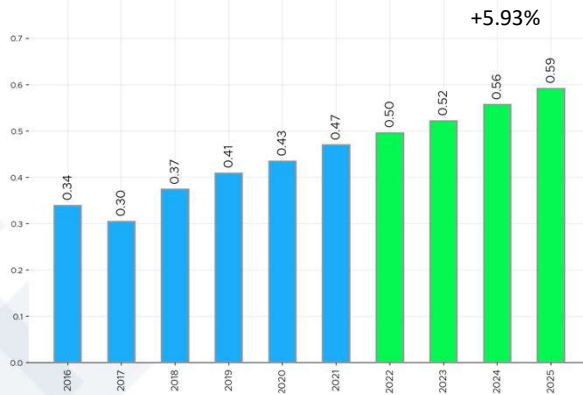
% Over 60
2.7%



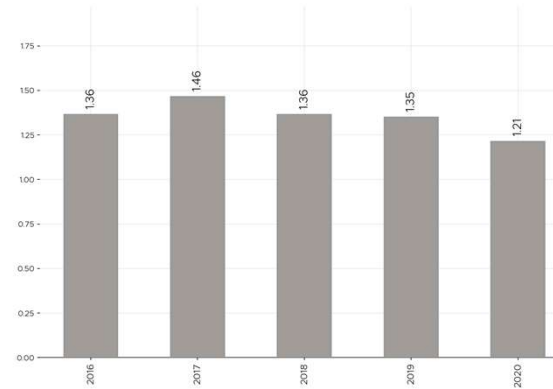
Gdp per capita CAGR 21/25
17,869 **+3.1%**

Source: elaboration on data World Bank

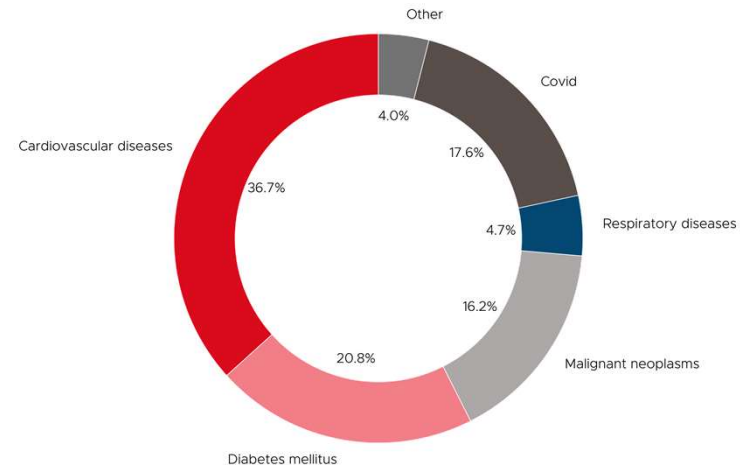
Pharma spending (bln €)



Health Spending (bln €)



Death causes (%)





Bangladesh



Population CAGR 16/20

164,689,383 +1.0%



% Over 60
5.2%

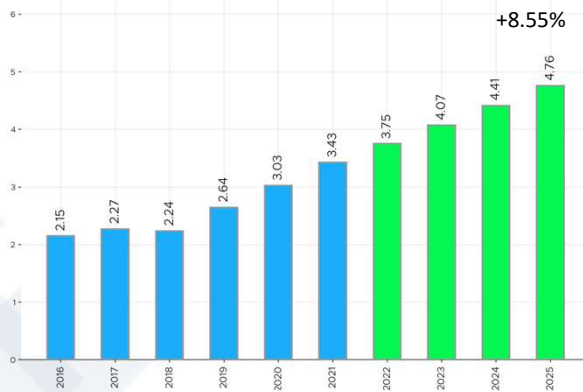


Gdp per capita CAGR 21/25

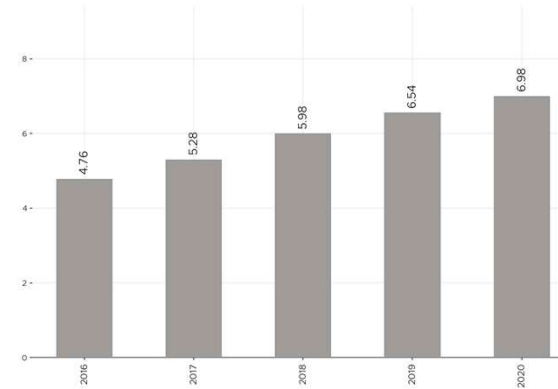
1,717 € +7.0%

Source: elaboration on data World Bank

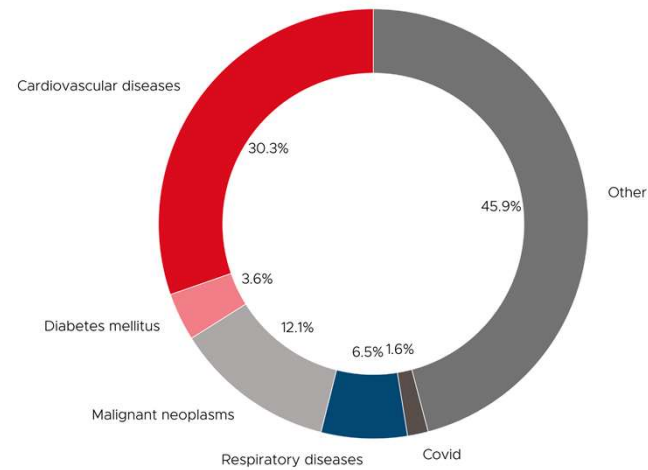
Pharma spending (bln €)



Health Spending (bln €)



Death causes (%)





Belarus



Population

9,379,952

CAGR 16/20

-0.2%



% Over 60

15.6%



Gdp per capita

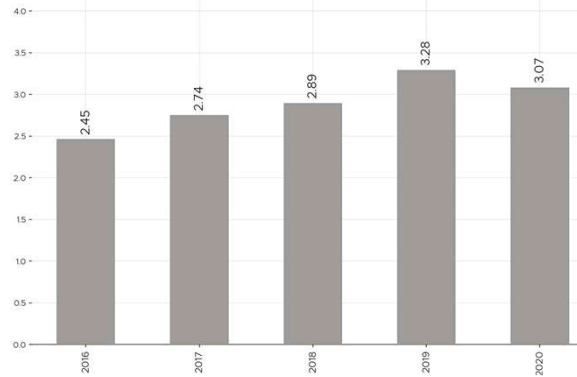
5,624 €

CAGR 21/25

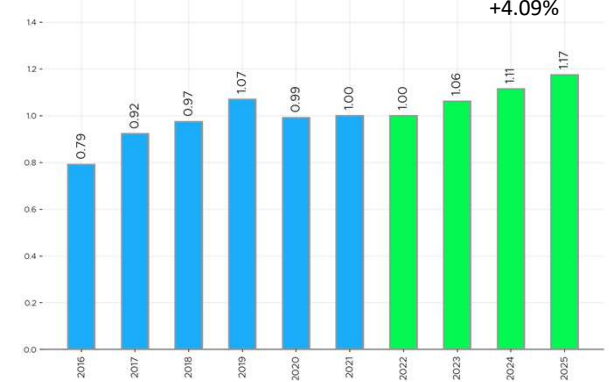
+1.0%

Source: elaboration on data World Bank

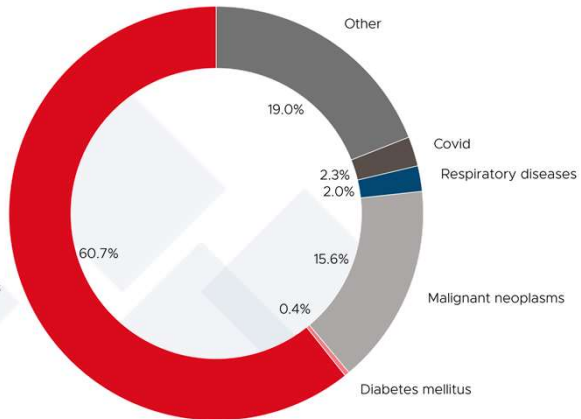
Health Spending (bln €)



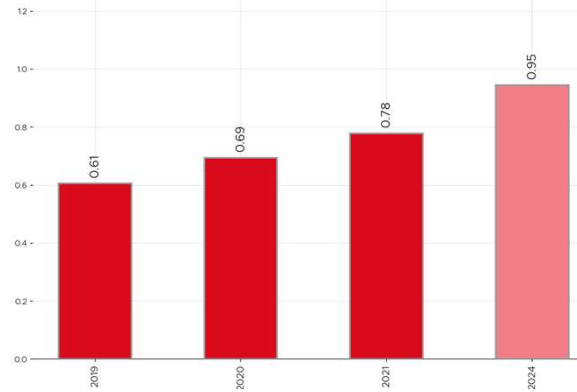
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

10.3 mln €

CAGR 21/25

1%



Belgium



Population

11,555,997

CAGR 16/20

+0.5%



% Over 60

19.3%



Gdp per capita

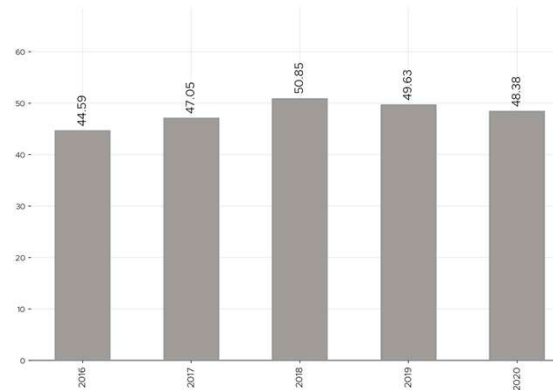
39,537 €

CAGR 21/25

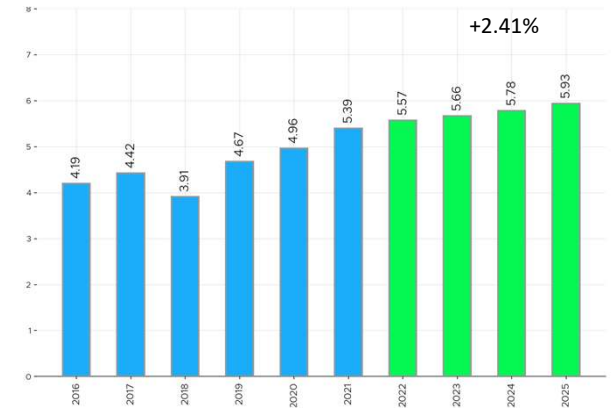
+1.9%

Source: elaboration on data World Bank

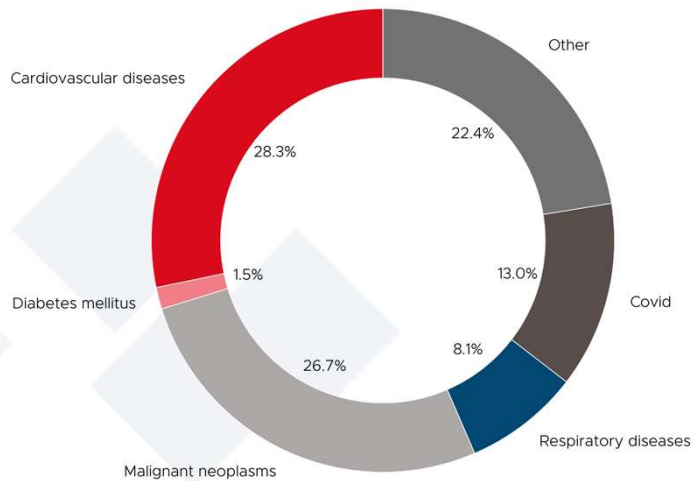
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025

60.1 mln €

CAGR 21/25

4.9%



Brazil



Population CAGR 16/20
212,559,409 +0.8%



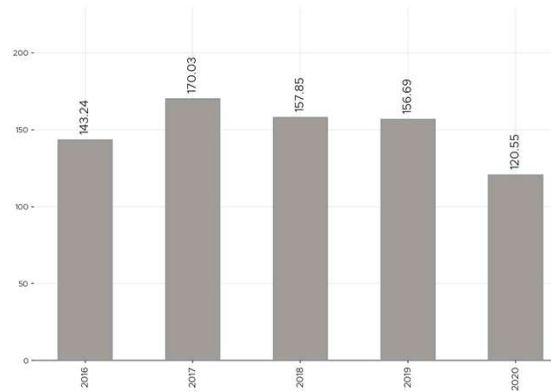
% Over 60
9.6%



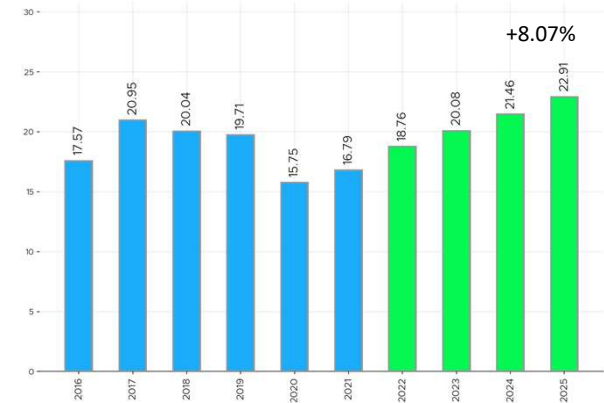
Gdp per capita CAGR 21/25
5,951 € +1.9%

Source: elaboration on data World Bank

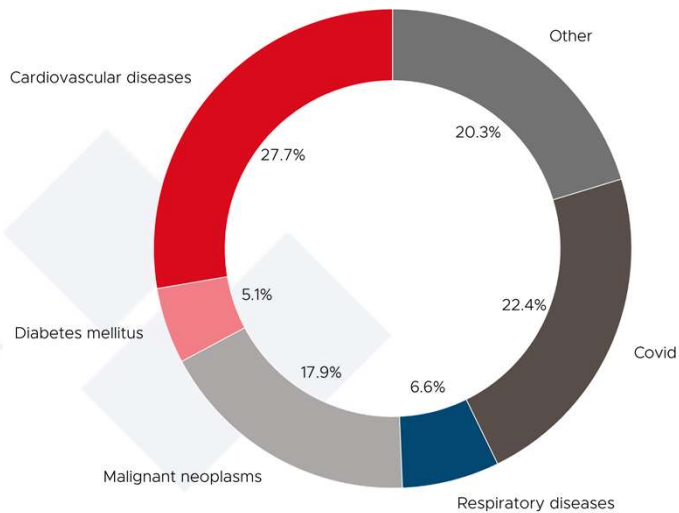
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
104.5 mln €
CAGR 21/25
3.6%



Bulgaria



Population

6,934,015

CAGR 16/20

-0.7%



% Over 60

21.5%



Gdp per capita

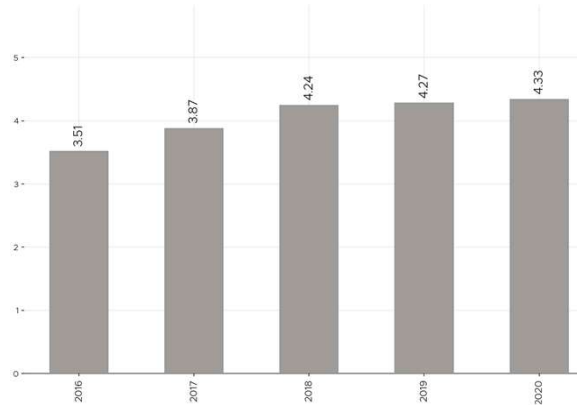
8,824 €

CAGR 21/25

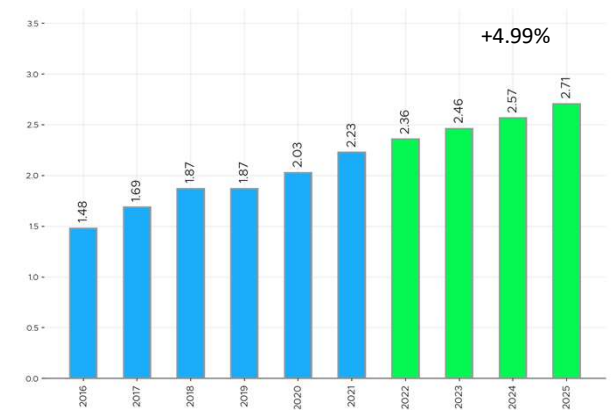
+3.8%

Source: elaboration on data World Bank

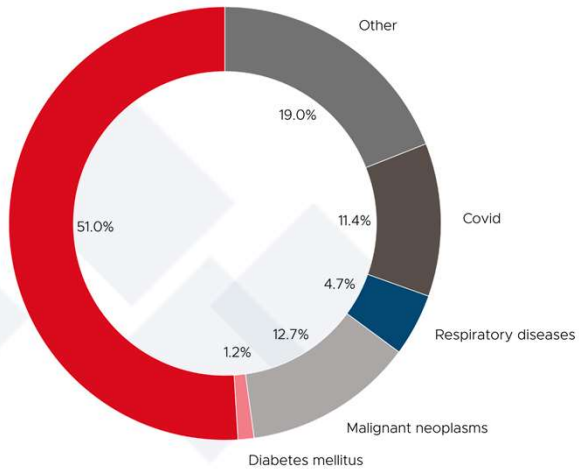
Health Spending (bln €)



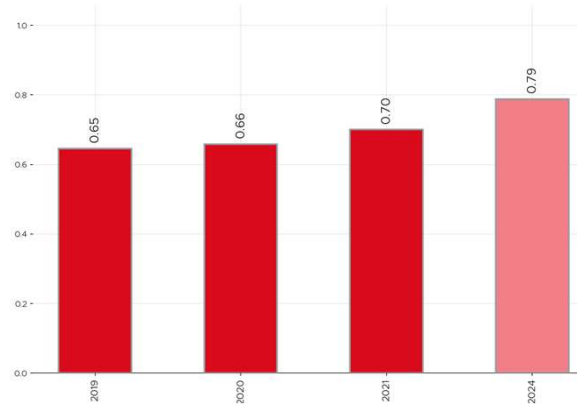
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

12.7 mln €

CAGR 21/25

-0.1%

Canada



Population CAGR 16/20
38,005,238 +1.3%



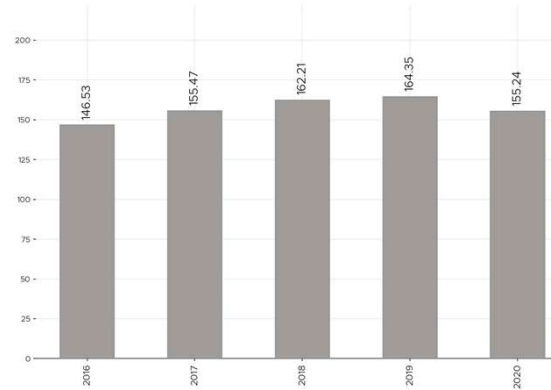
% Over 60
18.1%



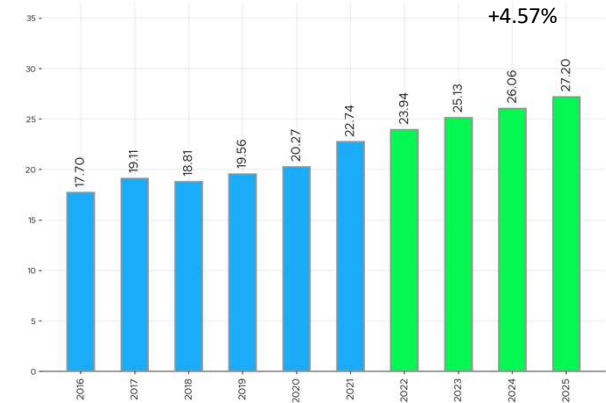
Gdp per capita CAGR 21/25
37,905 € +2.6%

Source: elaboration on data World Bank

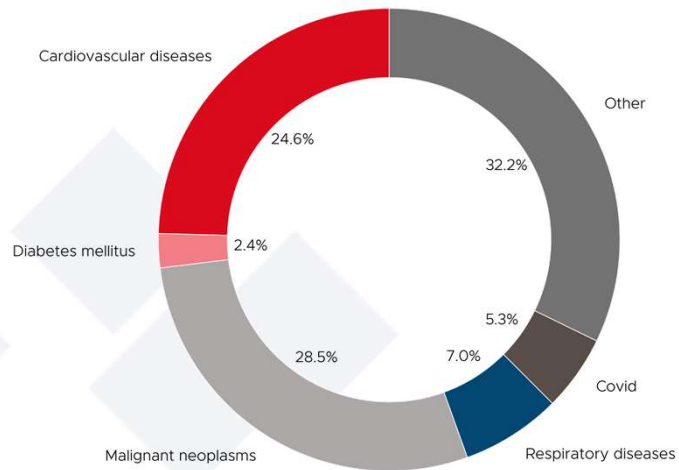
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
141.9 mln €
CAGR 21/25
1.1%



China



Population CAGR 16/20
1,410,929,362 +0.4%



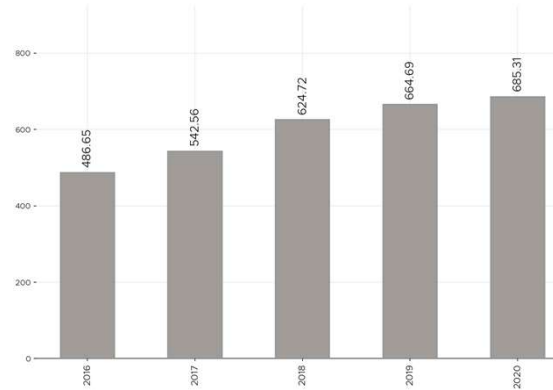
% Over 60
12.0%



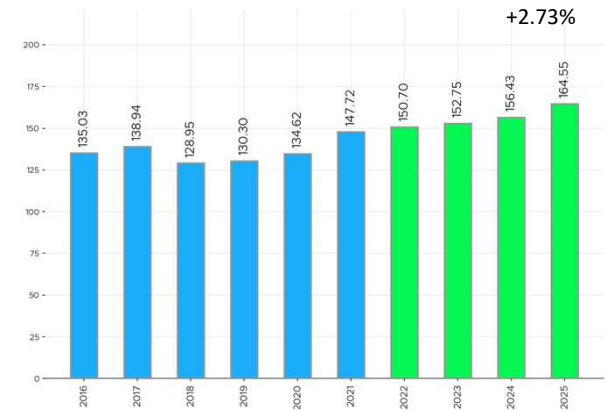
Gdp per capita CAGR 21/25
9,136 € +5.3%

Source: elaboration on data World Bank

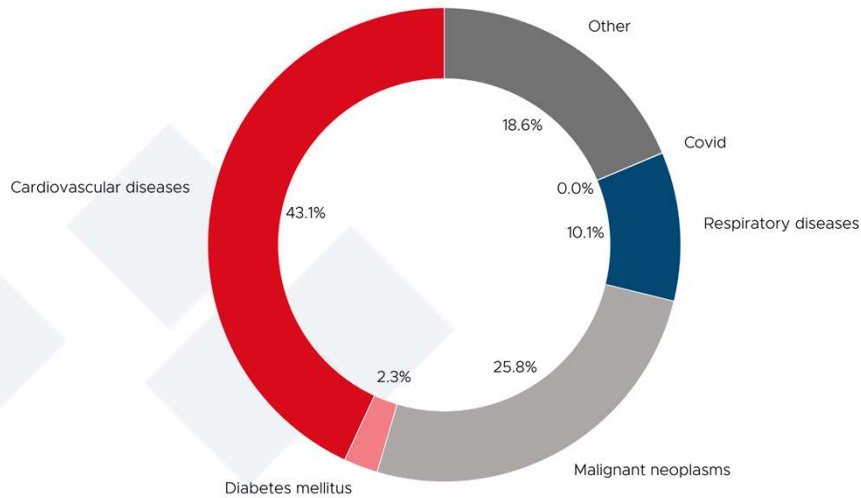
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
1,223 mln €
CAGR 21/25
5.3%



Colombia



Population CAGR 16/20
50,882,884 +1.4%



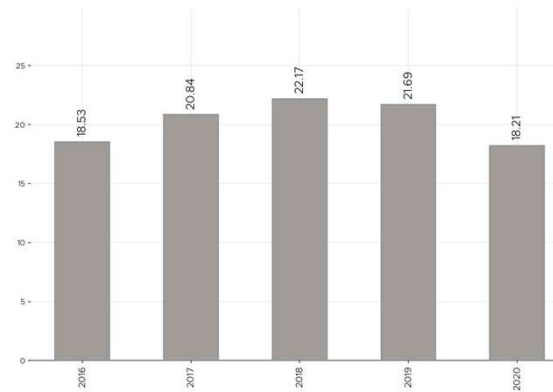
% Over 60
9.1%



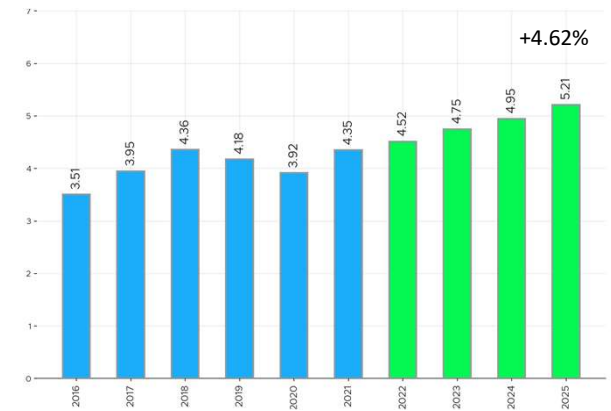
Gdp per capita CAGR 21/25
4,670 € +3.5%

Source: elaboration on data World Bank

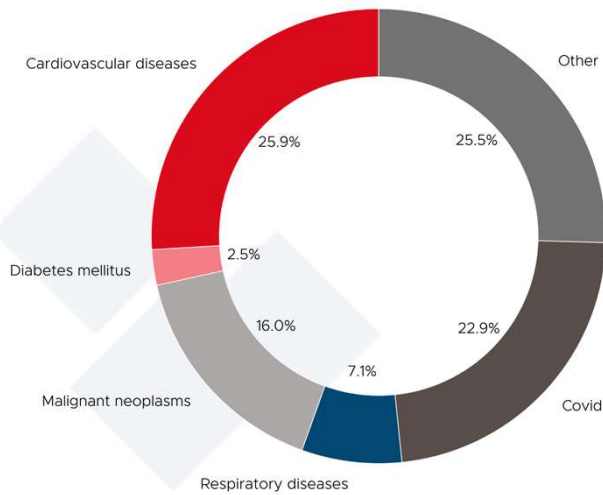
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
22.7 mln €

CAGR 21/25
-0.2%



Croatia



Population

4,047,200

CAGR 16/20

-0.8%



% Over 60

21.3%



Gdp per capita

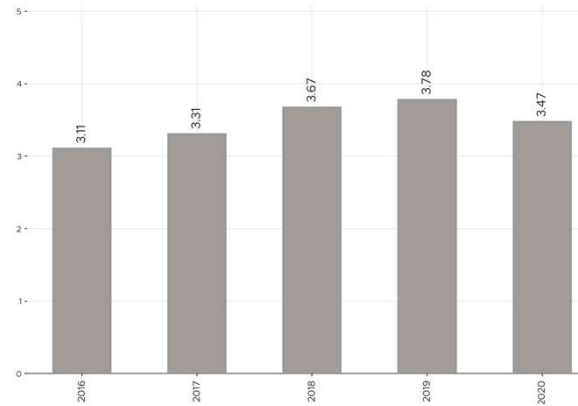
12,375 €

CAGR 21/25

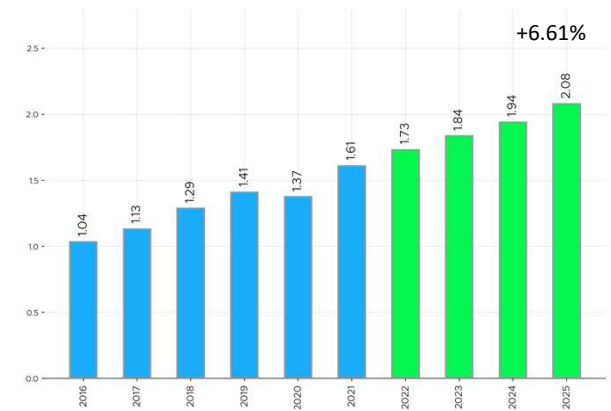
+4.1%

Source: elaboration on data World Bank

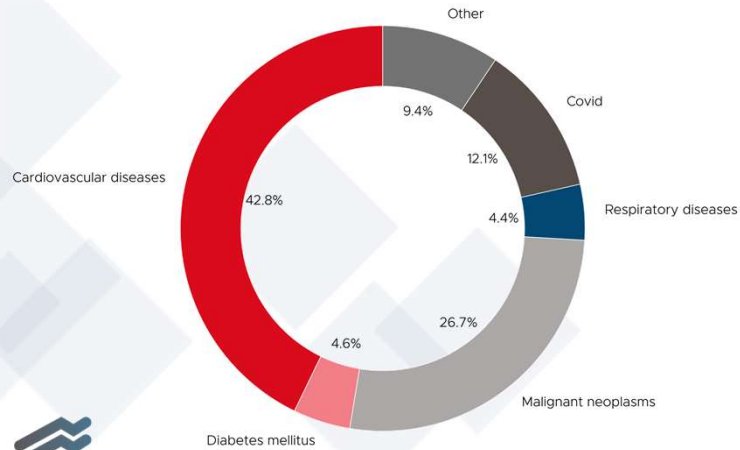
Health Spending (bln €)



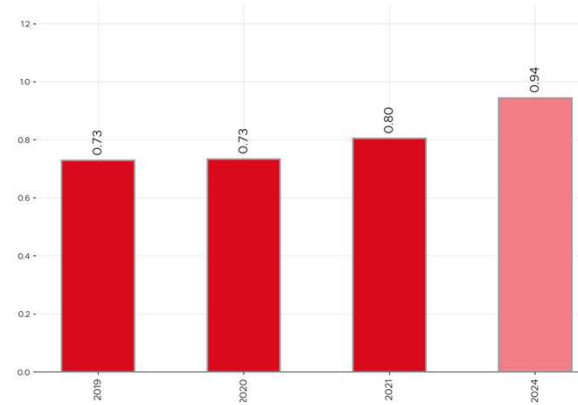
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

14.6 mln €

CAGR 21/25

4.5%



Cuba



Population CAGR 16/20

11,326,616 **0.0%**



% Over 60
15.9%

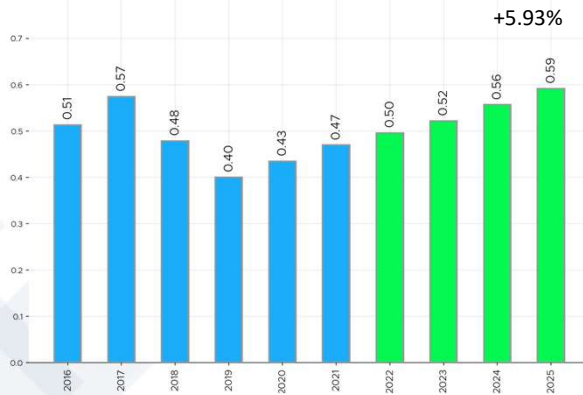


Gdp per capita CAGR 21/25

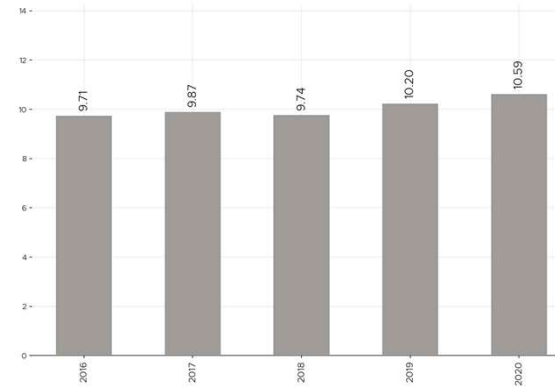
8,298 € **n.d**

Source: elaboration on data World Bank

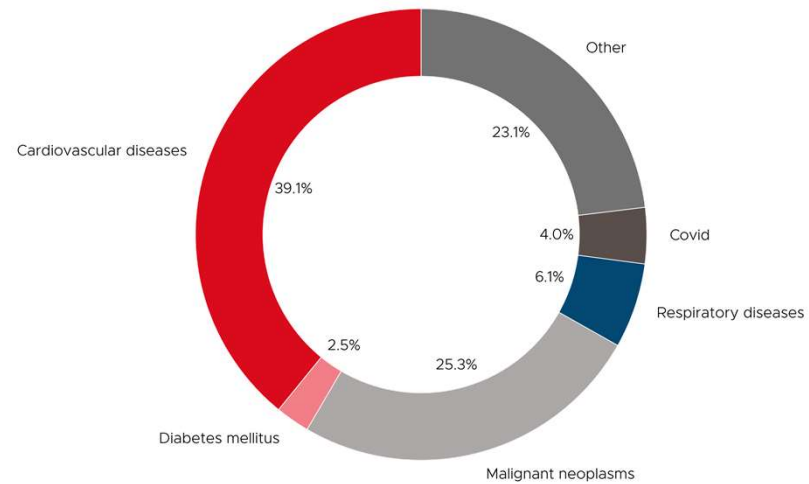
Pharma spending (bln €)



Health Spending (bln €)



Death causes (%)





Czech Rep.



Population CAGR 16/20
10,698,896 +0.3%



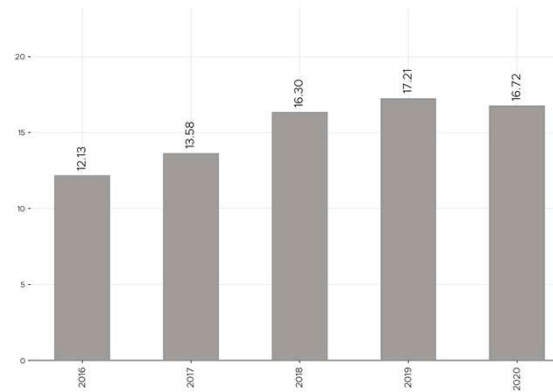
% Over 60
20.1%



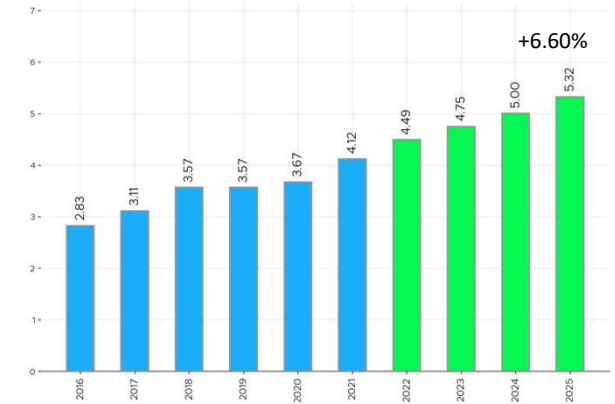
Gdp per capita CAGR 21/25
20,076 € +3.8%

Source: elaboration on data World Bank

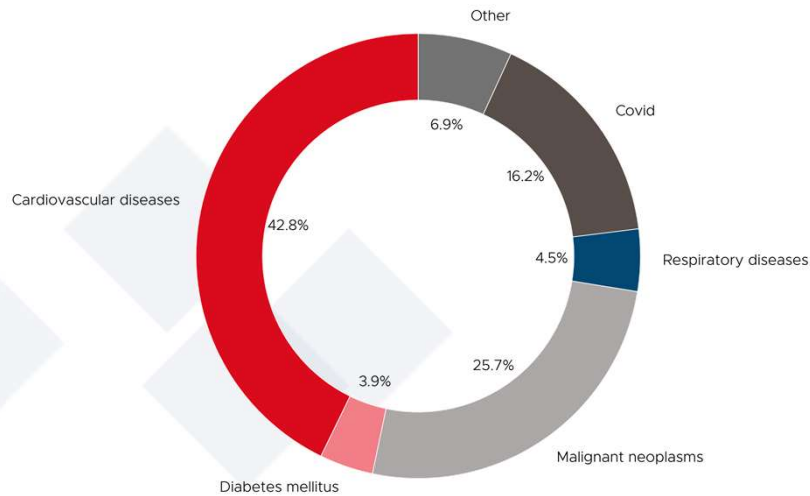
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025

27.7 mln €

CAGR 21/25

0.3%



Denmark



Population

5,831,404

CAGR 16/20

+0.4%



% Over 60

20.2%



Gdp per capita

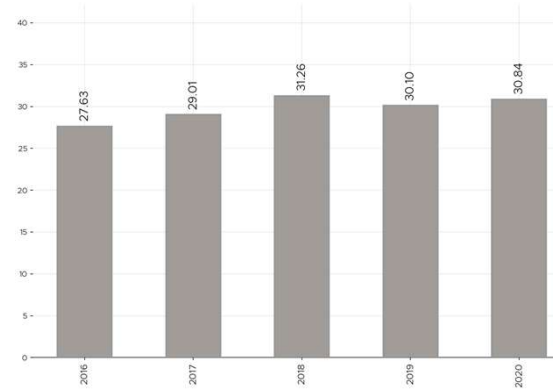
53,461 €

CAGR 21/25

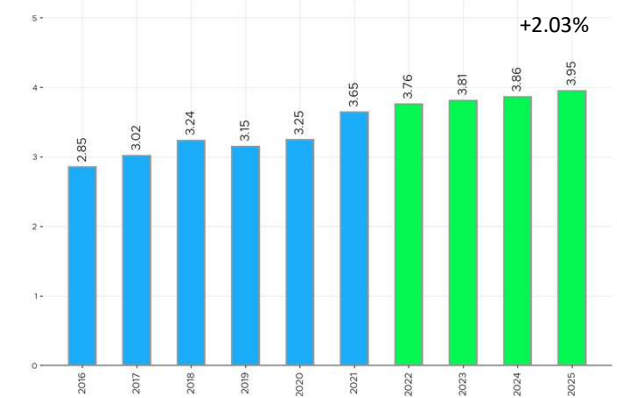
+2.1%

Source: elaboration on data World Bank

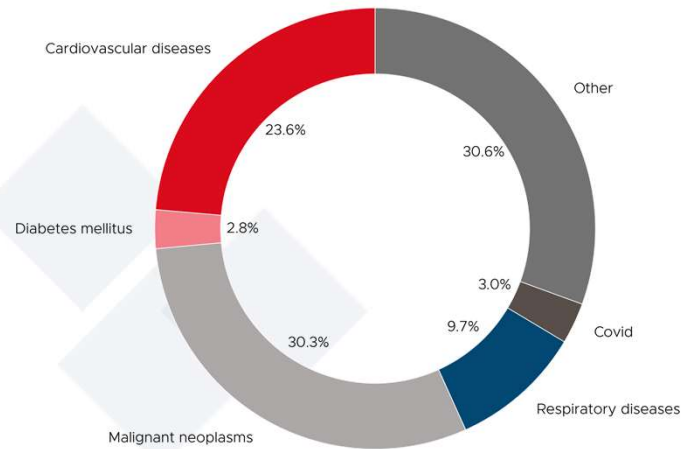
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025

47.3 mln €

CAGR 21/25

1%



Egypt



Population CAGR 16/20
102,334,403 +2.0%



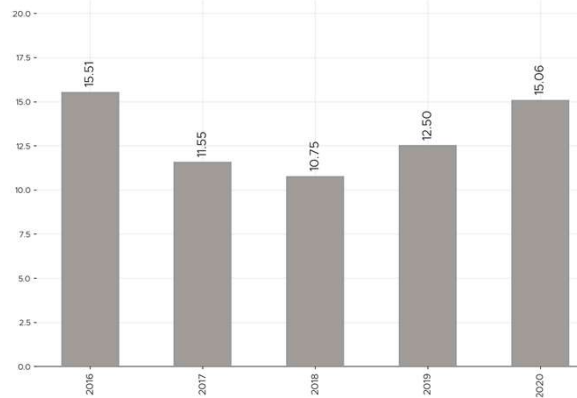
% Over 60
5.3%



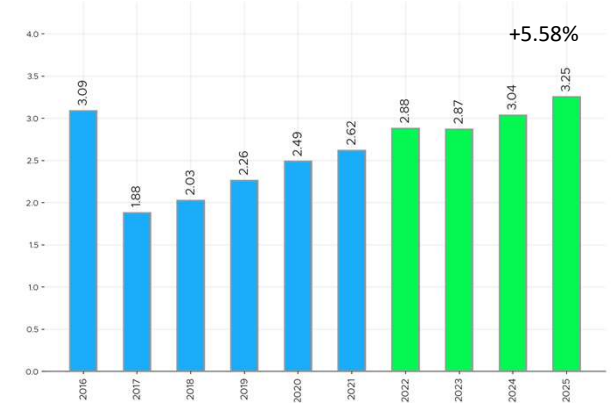
Gdp per capita CAGR 21/25
3,125 € +5.6%

Source: elaboration on data World Bank

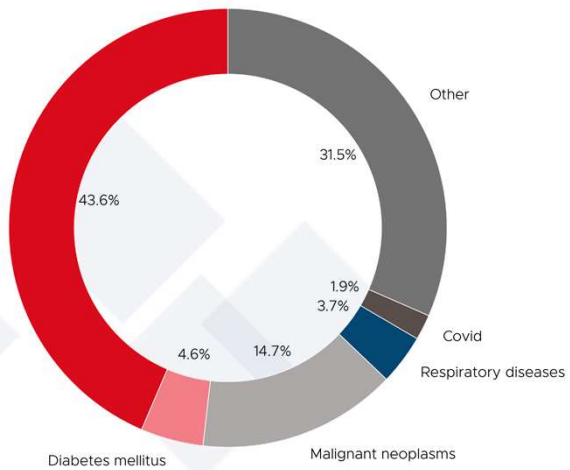
Health Spending (bln €)



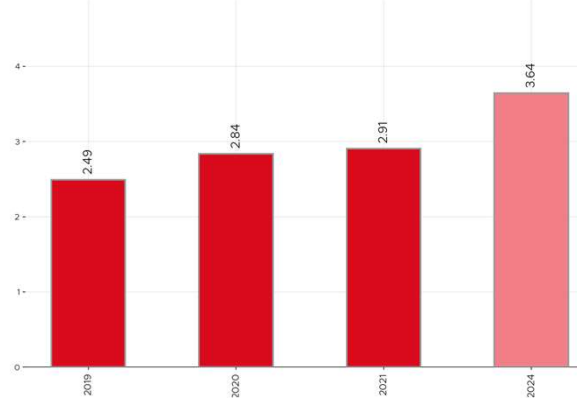
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
30.6 mln €

CAGR 21/25
1.6%

Finland



Population

5,530,719

CAGR 16/20

+0.2%



% Over 60

22.6%



Gdp per capita

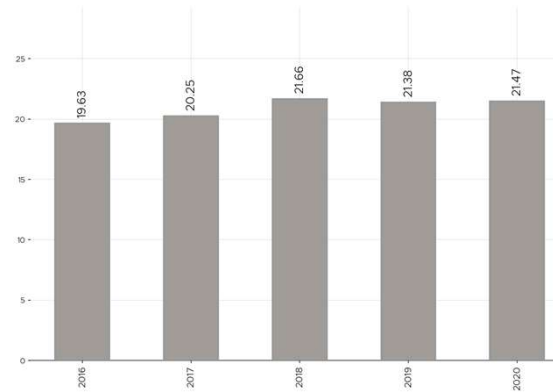
42,676 €

CAGR 21/25

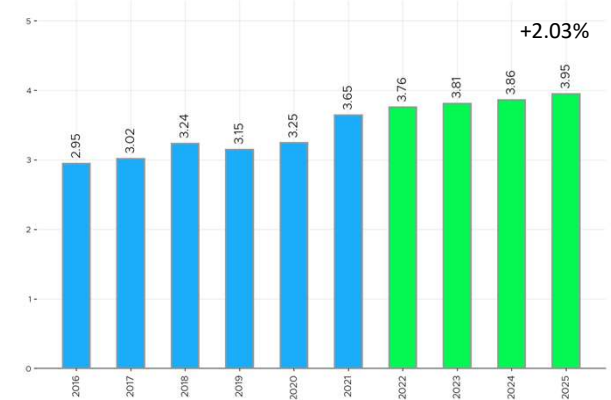
+1.8%

Source: elaboration on data World Bank

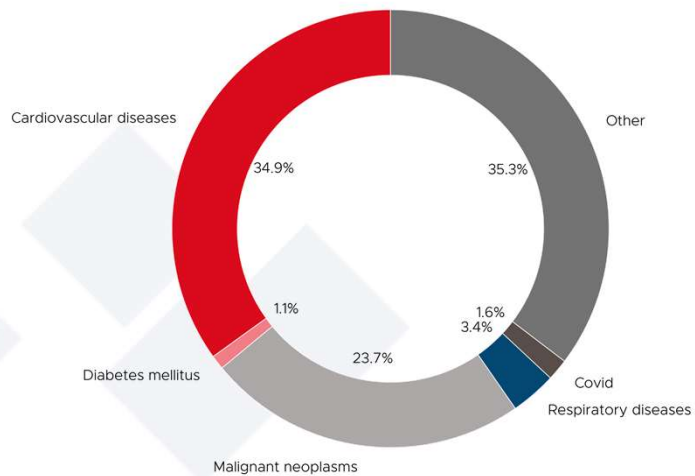
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025

22.8 mln €

CAGR 21/25

0.4%

France



Population CAGR 16/20
67,391,582 +0.2%



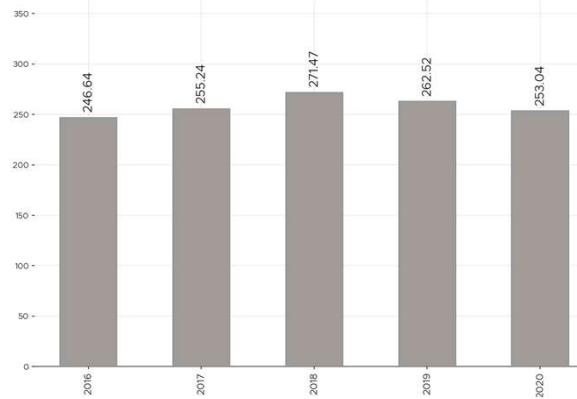
% Over 60
20.8%



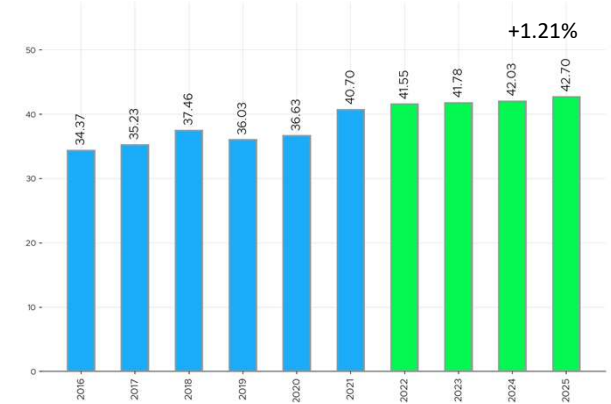
Gdp per capita CAGR 21/25
34,171 € +2.1%

Source: elaboration on data World Bank

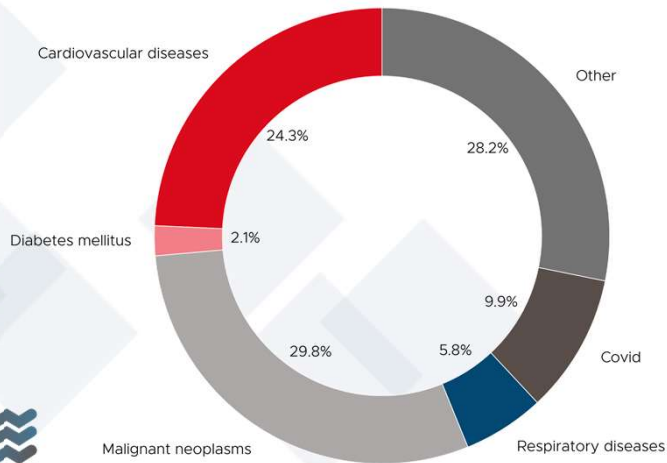
Health Spending (bln €)



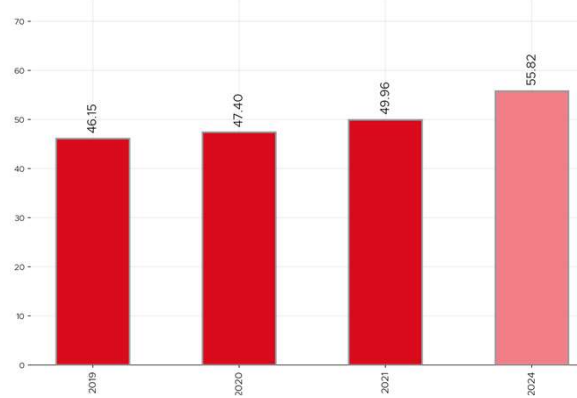
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
308.3 mln €

CAGR 21/25
3.7%



Germany



Population CAGR 16/20
83,240,525 +0.3%



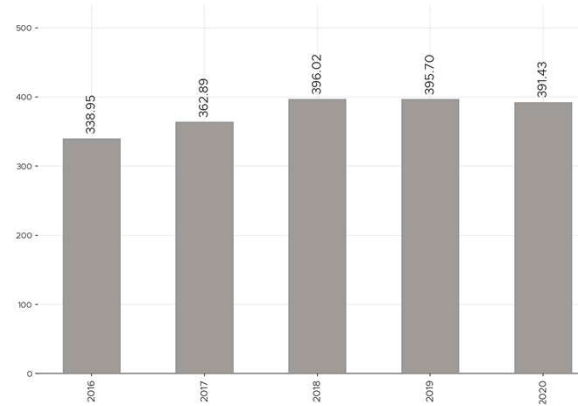
% Over 60
21.7%



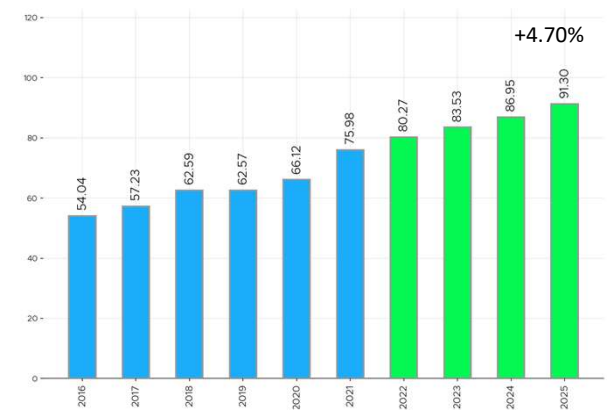
Gdp per capita CAGR 21/25
40,456 € +2.2%

Source: elaboration on data World Bank

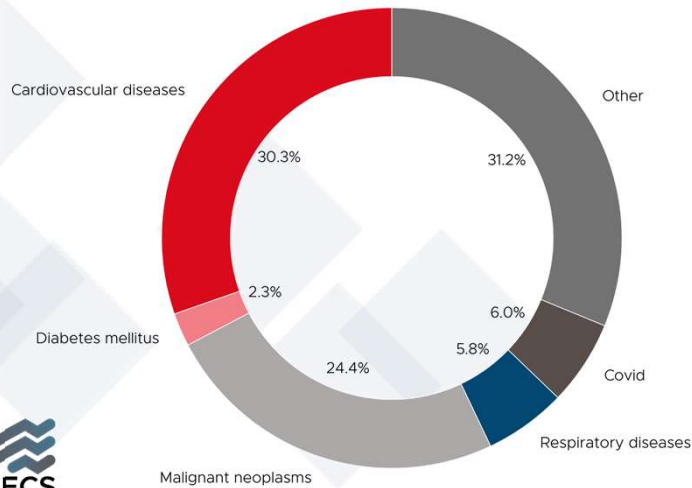
Health Spending (bln €)



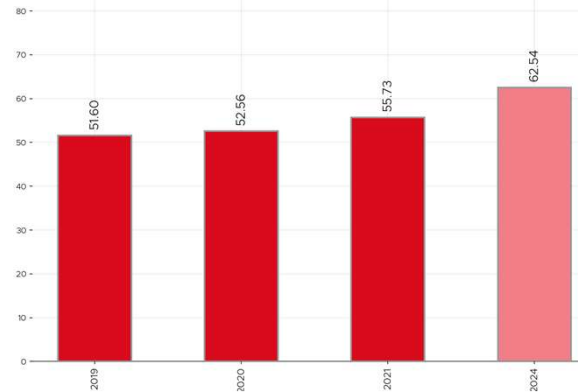
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
408.9 mln €

CAGR 21/25
0.6%



Ghana



Population CAGR 16/20
31,072,945 +2.2%



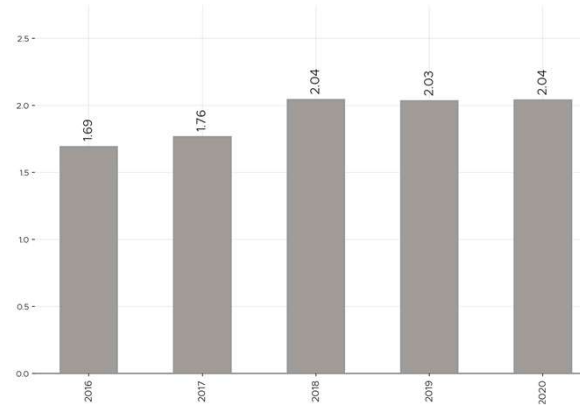
% Over 60
3.1%



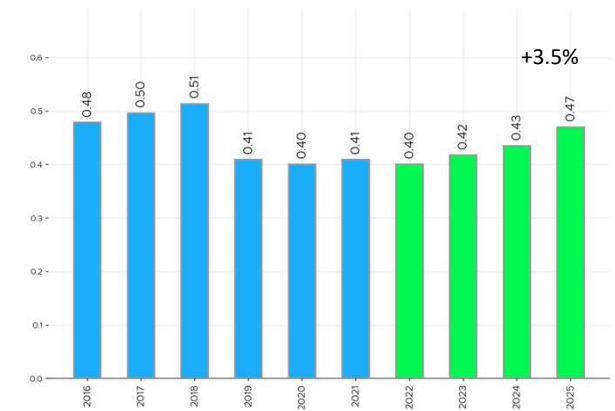
Gdp per capita CAGR 21/25
1,931 € +5.4%

Source: elaboration on data World Bank

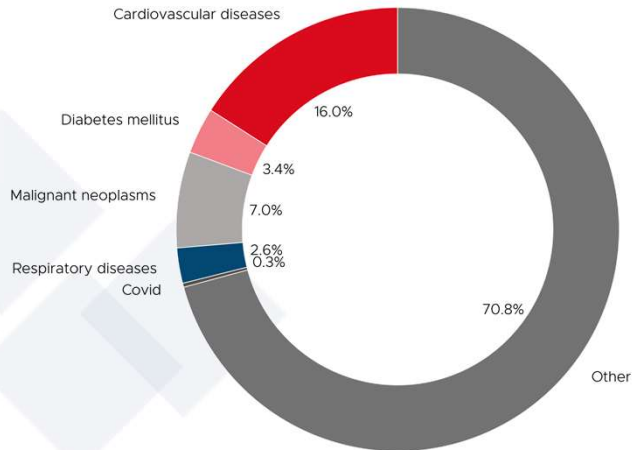
Health Spending (bln €)



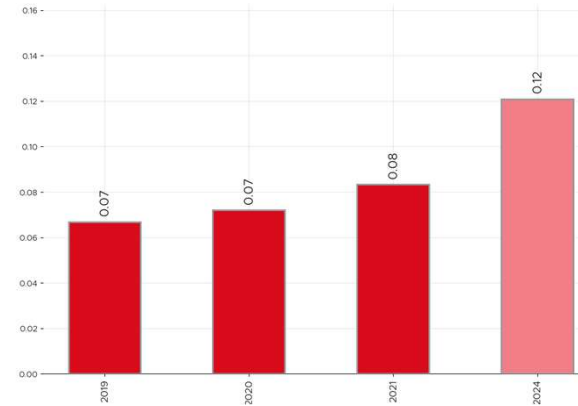
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)





Greece



Population

10,715,549

CAGR 16/20

-0.1%



% Over 60

22.3%



Gdp per capita

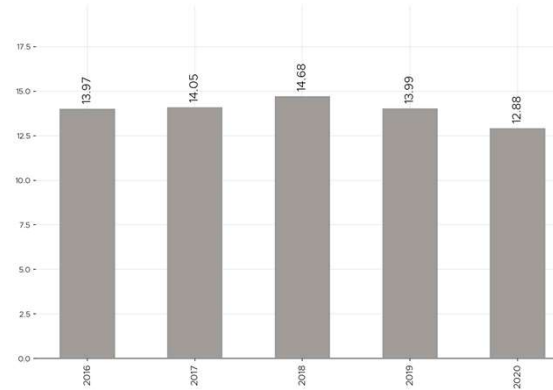
15,429 €

CAGR 21/25

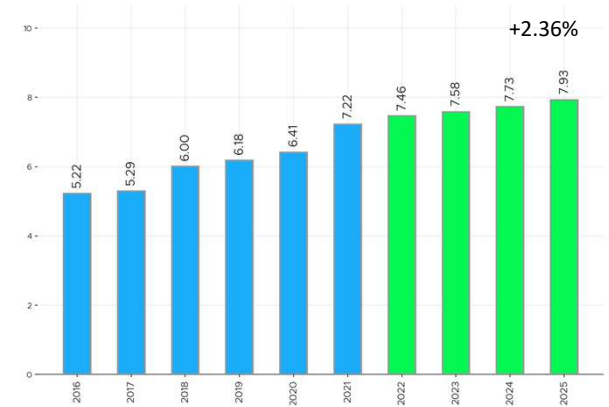
+2.6%

Source: elaboration on data World Bank

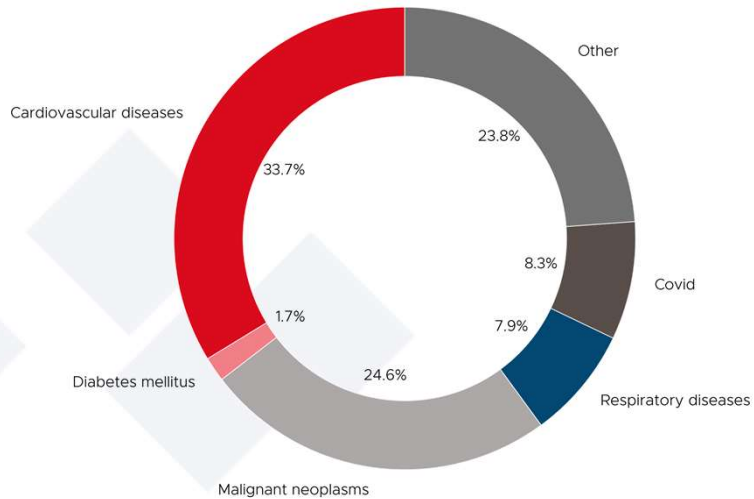
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025

23.1 mln €

CAGR 21/25

1.4%



Hong Kong



Population

7,481,800

CAGR 16/20

+0.5%



% Over 60

18.2%



Gdp per capita

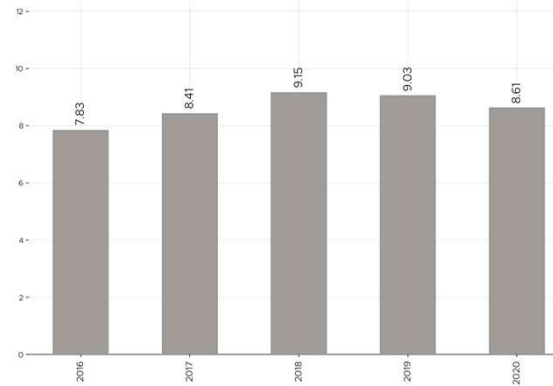
40,557 €

CAGR 21/25

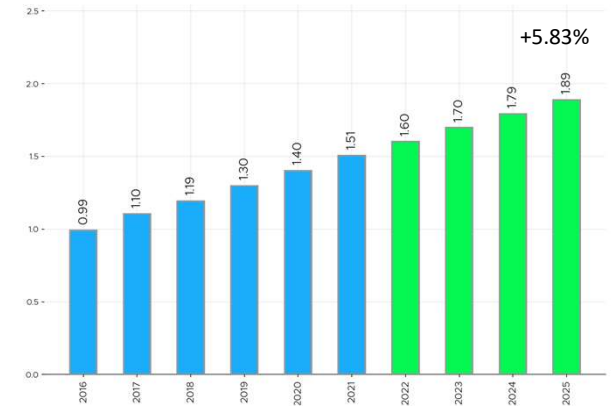
+3.1%

Source: elaboration on data World Bank

Health Spending (bln €)



Pharma spending (bln €)



Pharma packaging machinery



Market value
Forecast 2025

21.3 mln €

CAGR 21/25

6%



Hungary



Population

9,749,763

CAGR 16/20

-0.2%



% Over 60

20.2%



Gdp per capita

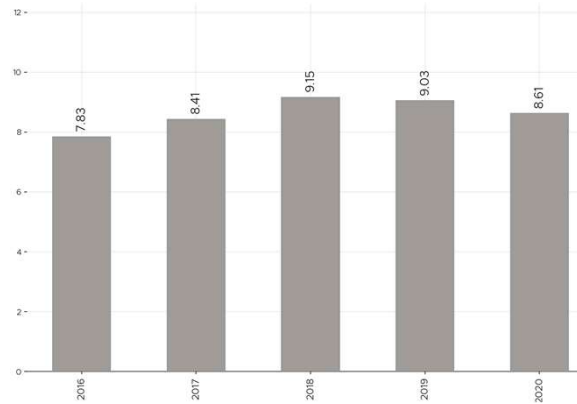
13,991 €

CAGR 21/25

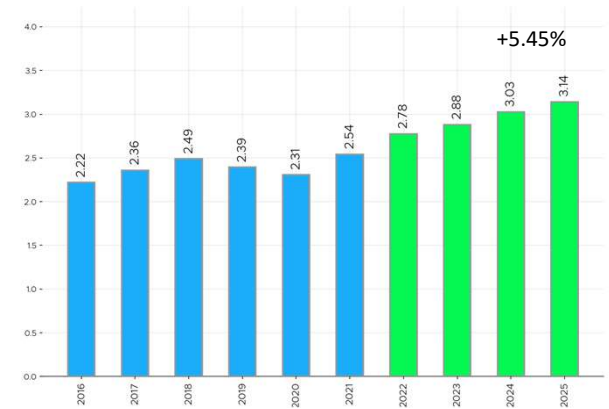
+3.7%

Source: elaboration on data World Bank

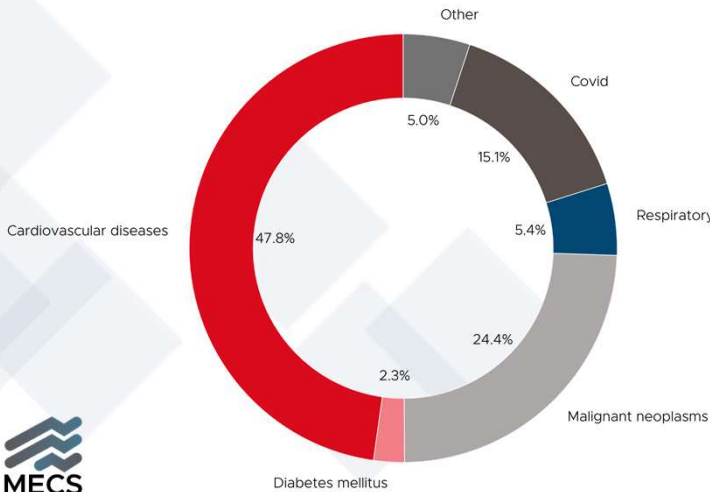
Health Spending (bln €)



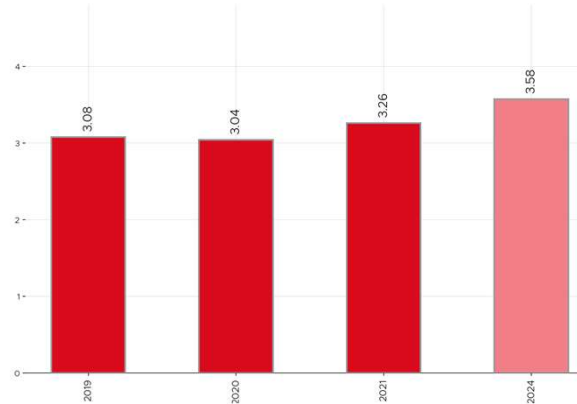
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

22.8 mln €

CAGR 21/25

-0.9%



India



Population CAGR 16/20
1,380,004,385 +1.0%



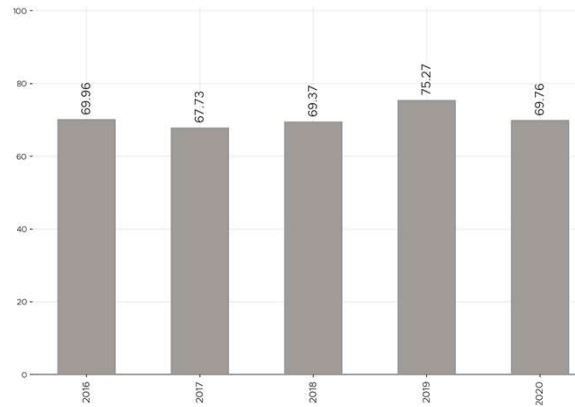
% Over 60
6.6%



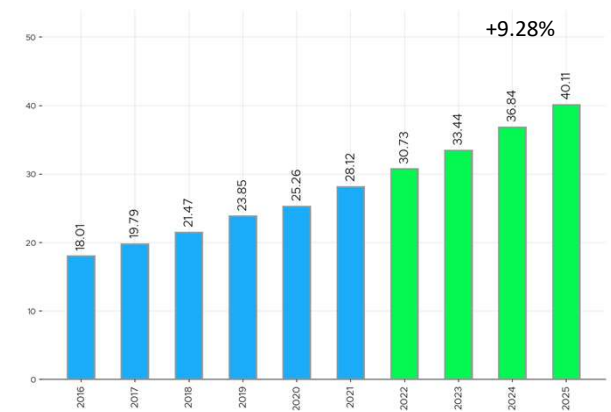
Gdp per capita CAGR 21/25
1,688 +6.9%

Source: elaboration on data World Bank

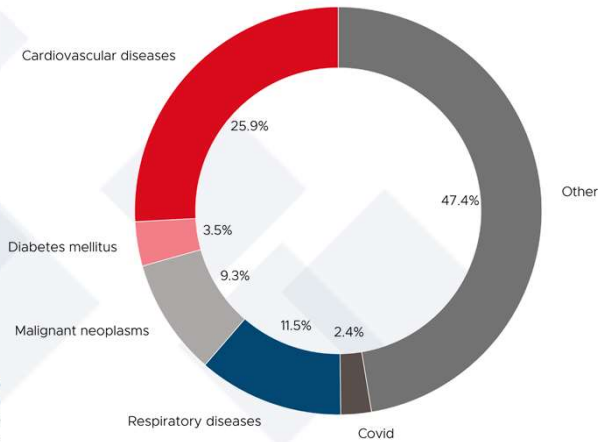
Health Spending (bln €)



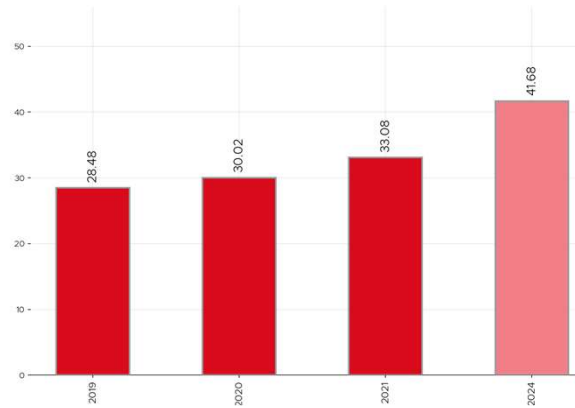
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
278.4 mln €

CAGR 21/25
1%

Indonesia



Population CAGR 16/20
273,523,621 +1.1%



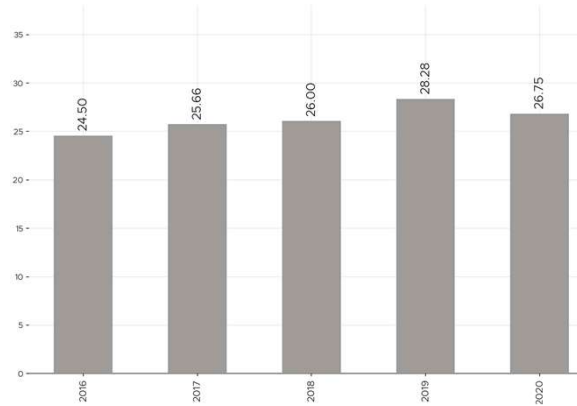
% Over 60
6.3%



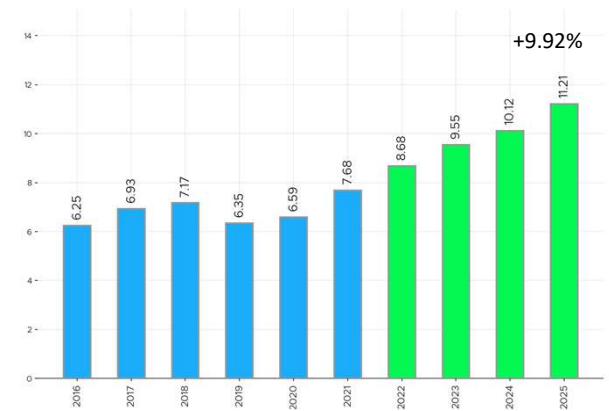
Gdp per capita CAGR 21/25
3,388 € +5.8%

Source: elaboration on data World Bank

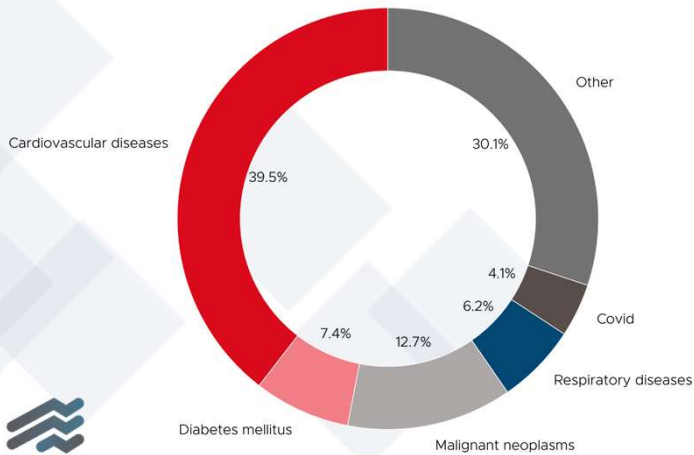
Health Spending (bln €)



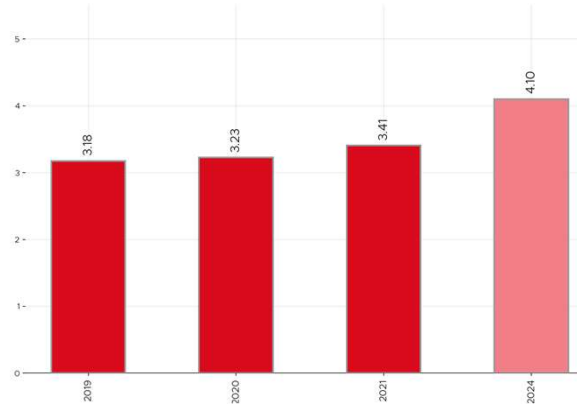
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
106.1 mln €

CAGR 21/25
4%



Iran



Population CAGR 16/20
89,992,953 +1.4%



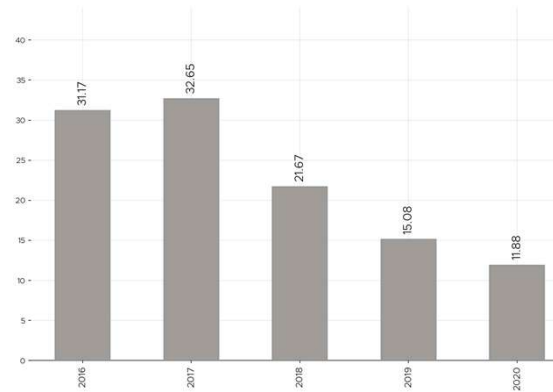
% Over 60
6.6%



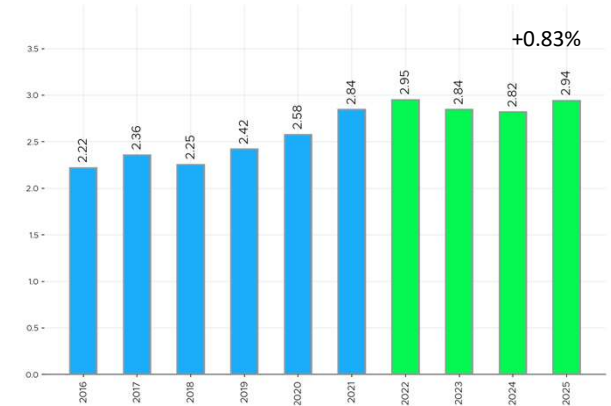
Gdp per capita CAGR 21/25
2,121 € +2.0%

Source: elaboration on data World Bank

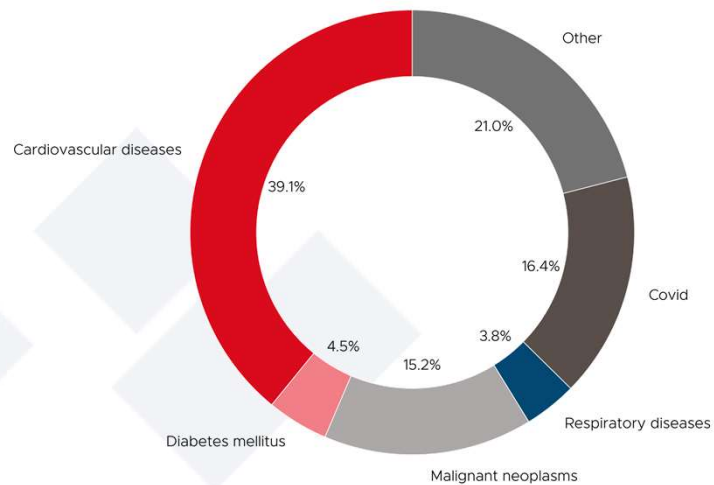
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
24.6 mln €
CAGR 21/25
4.6%



Iraq



Population CAGR 16/20
40,222,503 +2.4%



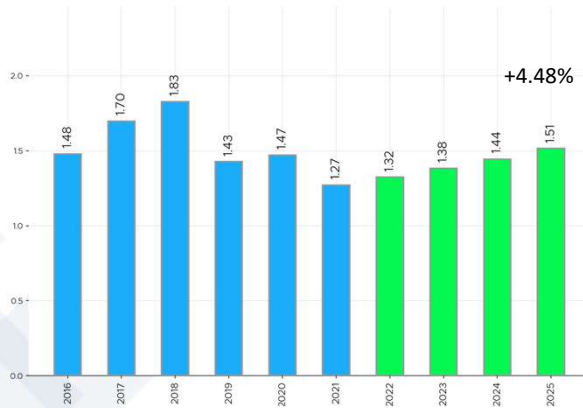
% Over 60
3.4%



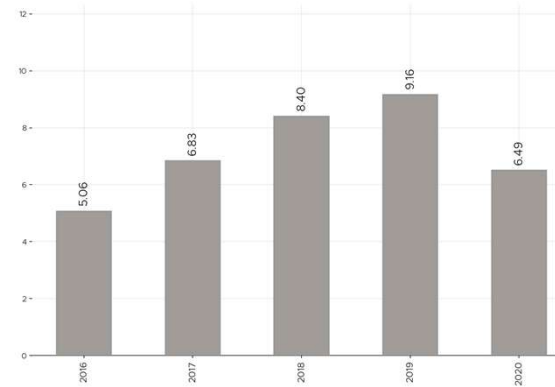
Gdp per capita CAGR 21/25
3,630 € +5.6%

Source: elaboration on data World Bank

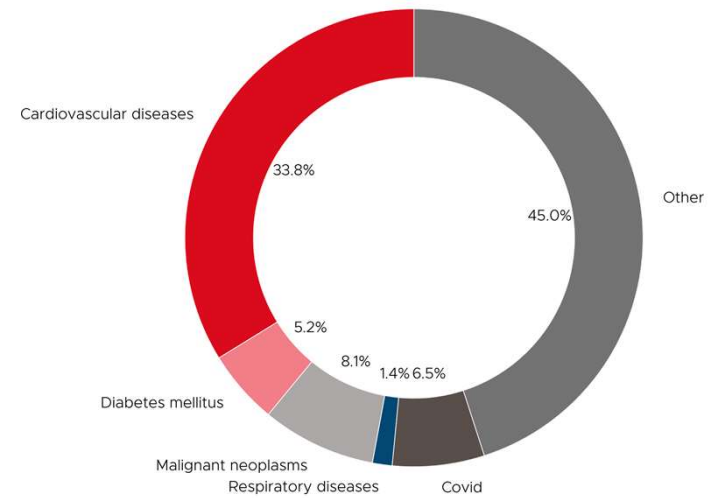
Pharma spending (bln €)



Health Spending (bln €)



Death causes (%)



Ireland



Population

4,994,724

CAGR 16/20

+1.2%



% Over 60

14.6%



Gdp per capita

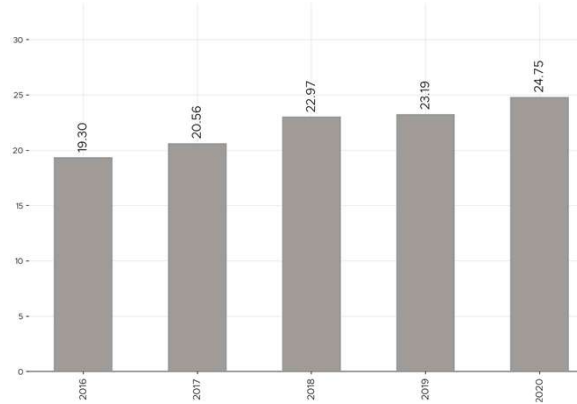
74,652 €

CAGR 21/25

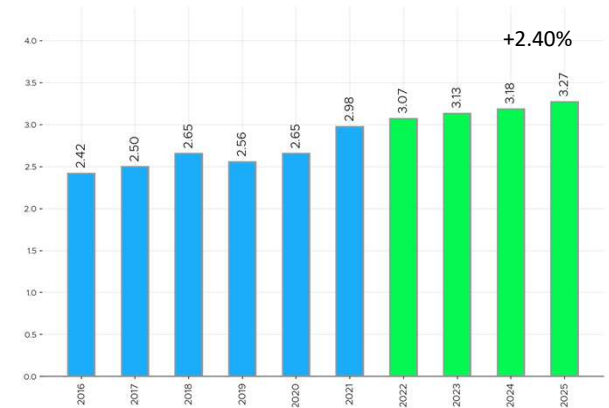
+3.3%

Source: elaboration on data World Bank

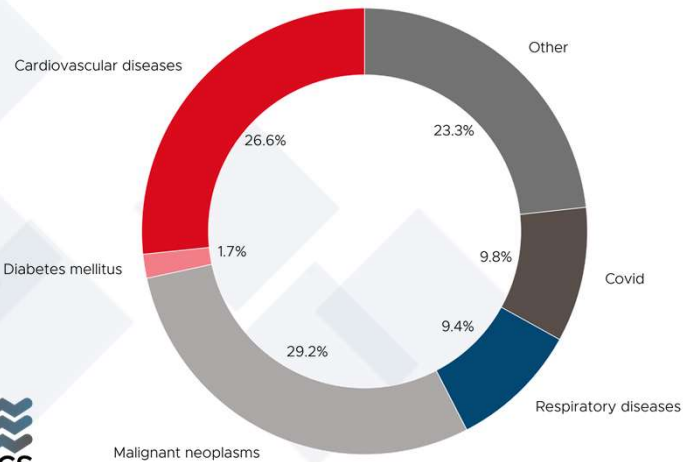
Health Spending (bln €)



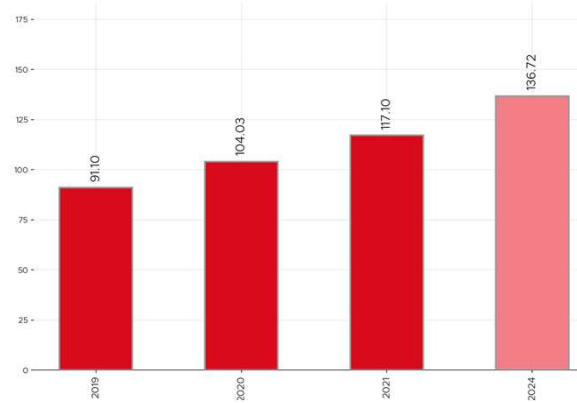
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

29.6 mln €

CAGR 21/25

1.5%



Israel



Population

9,216,900

CAGR 16/20

+1.9%



% Over 60

12.4%



Gdp per capita

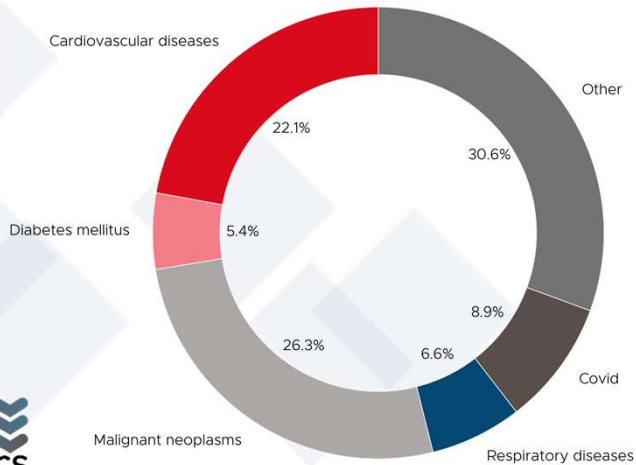
38,670

CAGR 21/25

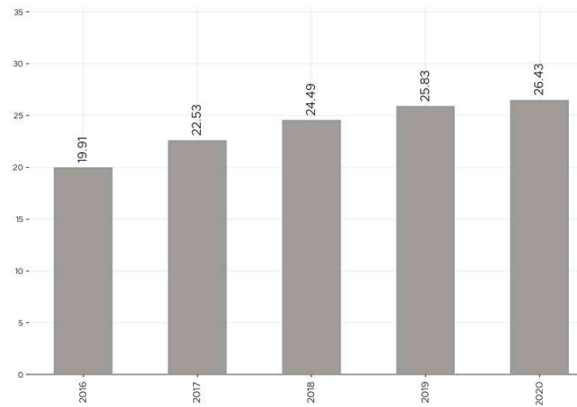
+3.5%

Source: elaboration on data World Bank

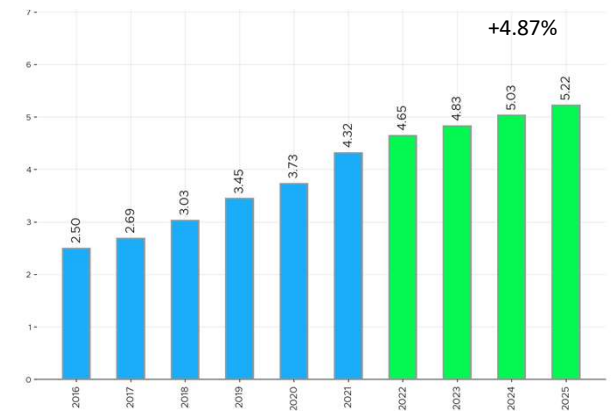
Death causes (%)



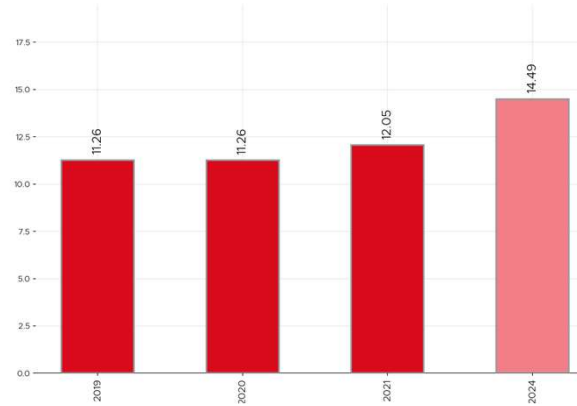
Health Spending (bln €)



Pharma spending (bln €)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

31.9 mln €

CAGR 21/25

1%

Italy



Population

59,554,023

CAGR 16/20

-0.4%



% Over 60

23.3%



Gdp per capita

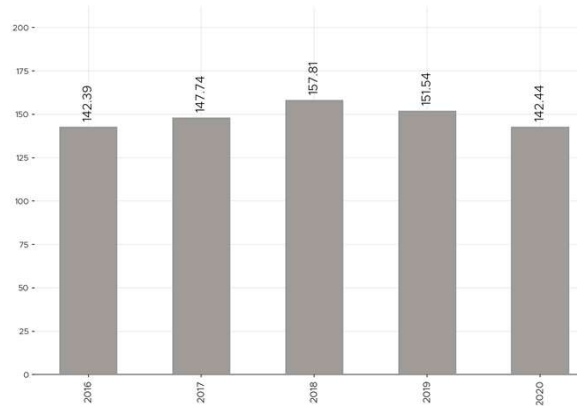
27,766 €

CAGR 21/25

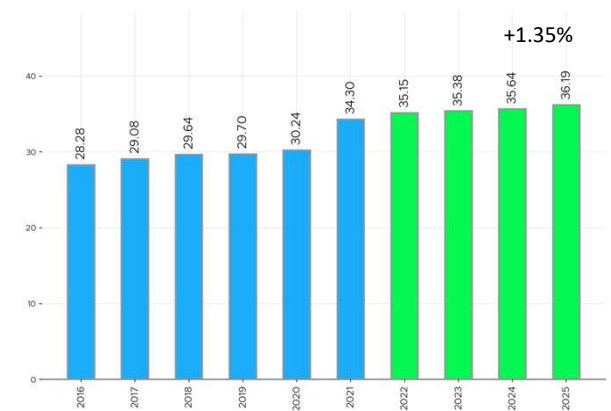
+1.9%

Source: elaboration on data World Bank

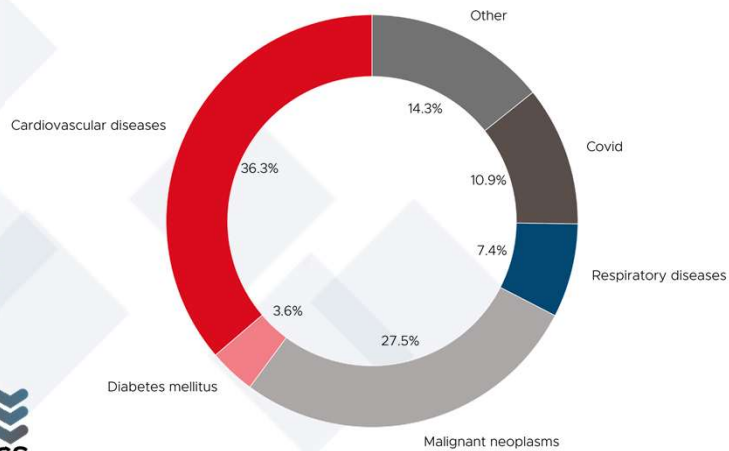
Health Spending (bln €)



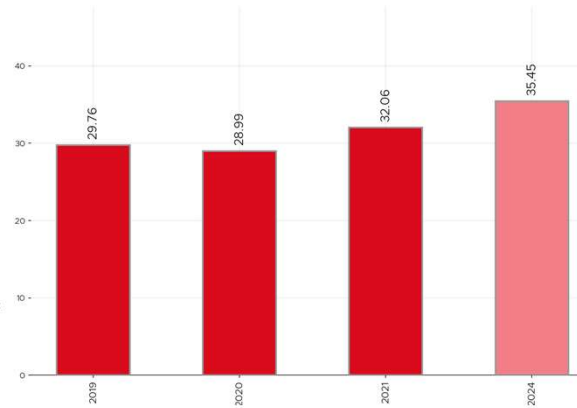
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
532.9 mln €

CAGR 21/25

6%

Japan



Population CAGR 16/20
125,836,021 -0.2%



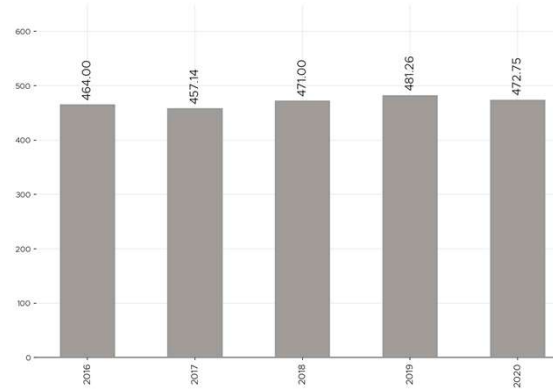
% Over 60
28.4%



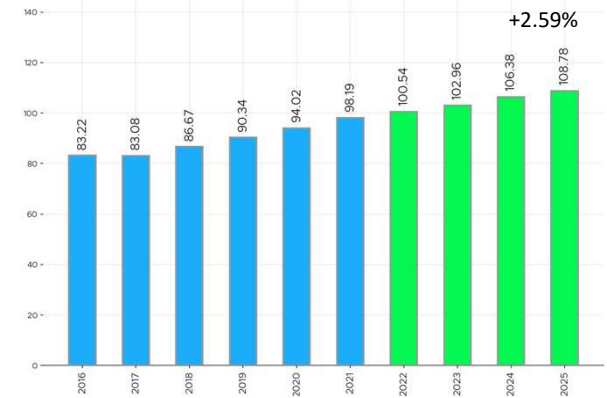
Gdp per capita CAGR 21/25
35,189 € +1.5%

Source: elaboration on data World Bank

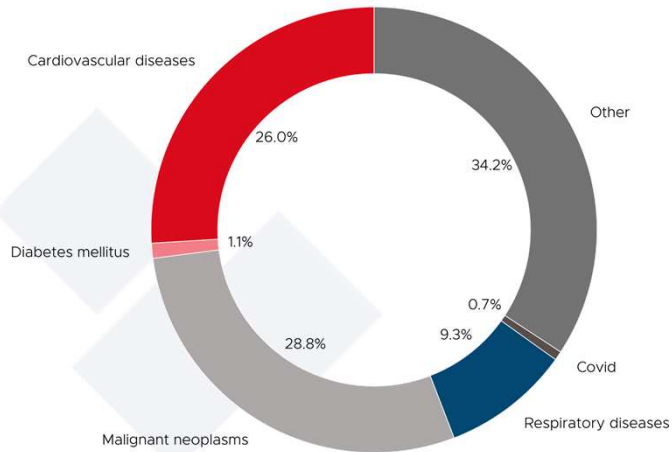
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
581.5 mln €
CAGR 21/25
2%



Jordan



Population CAGR 16/20
10,203,140 +1.7%



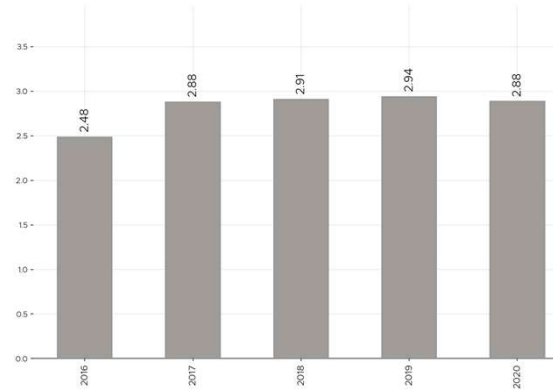
% Over 60
4.0%



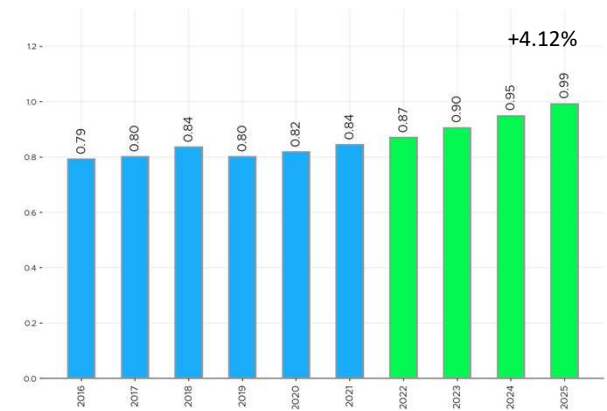
Gdp per capita CAGR 21/25
3,750 € +3.1%

Source: elaboration on data World Bank

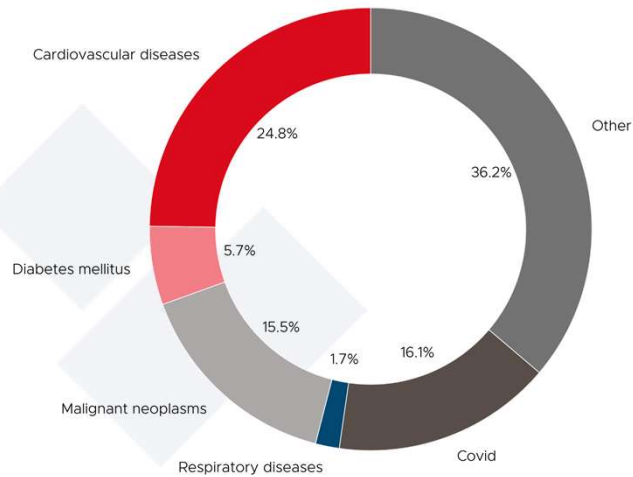
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
5.2 mln €
CAGR 21/25
-4.8%



Kenya



Population CAGR 16/20
53,771,300 +2.3%



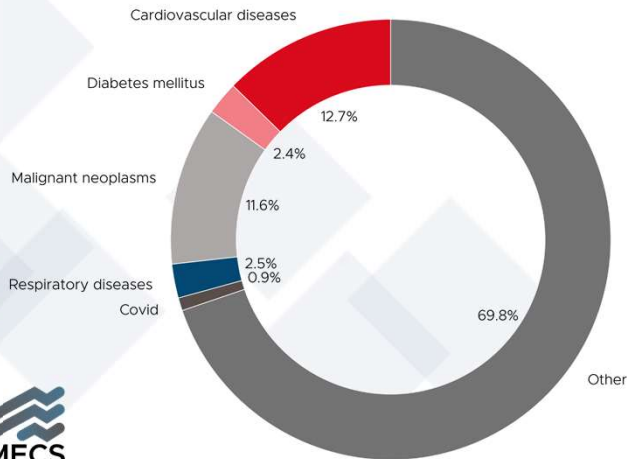
% Over 60
2.5%



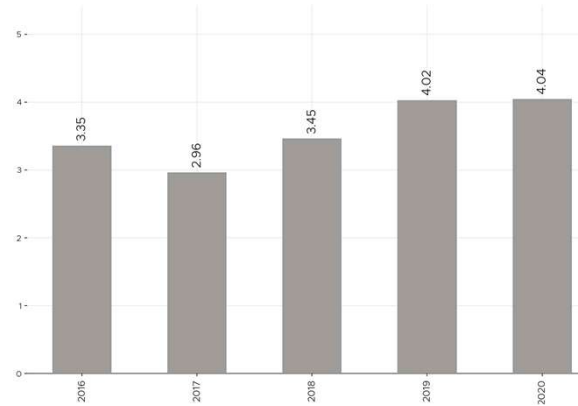
Gdp per capita CAGR 21/25
1,645 € +5.7%

Source: elaboration on data World Bank

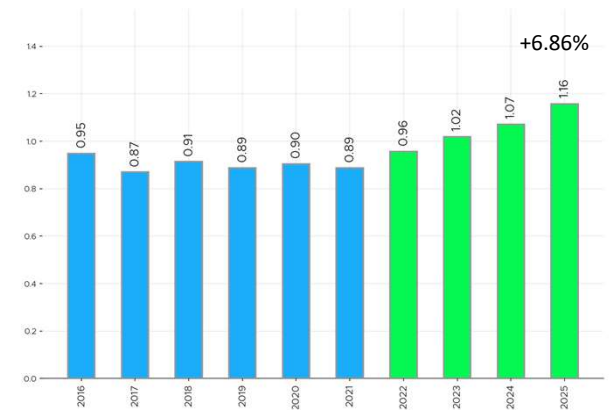
Death causes (%)



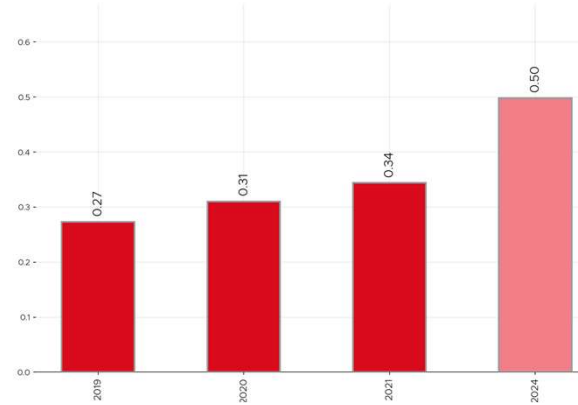
Health Spending (bln €)



Pharma spending (bln €)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

4.9 mln €

CAGR 21/25

-1.8%



Kuwait



Population CAGR 16/20
4,270,563 **+1.9%**



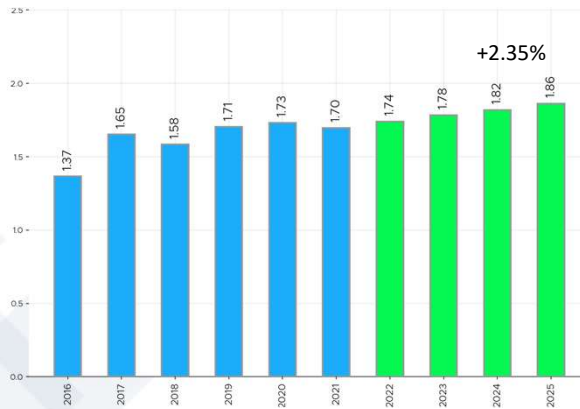
% Over 60
0.0%



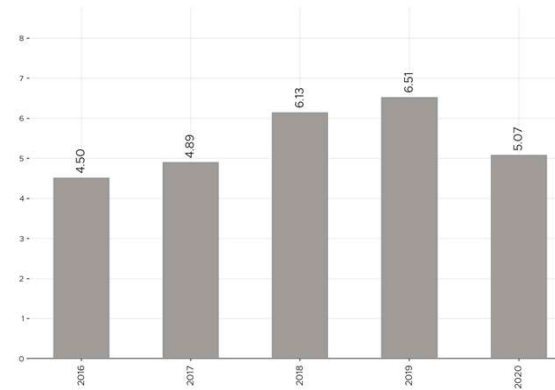
Gdp per capita CAGR 21/25
21,723 € **+3.1%**

Source: elaboration on data World Bank

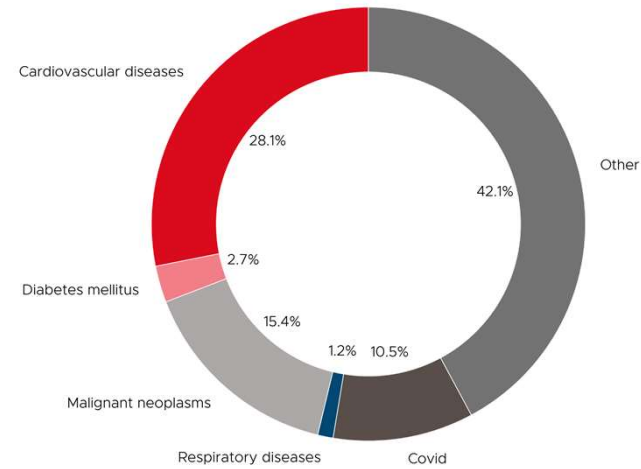
Pharma spending (bln €)



Health Spending (bln €)



Death causes (%)





Population CAGR 16/20
1,901,548 -0.7%



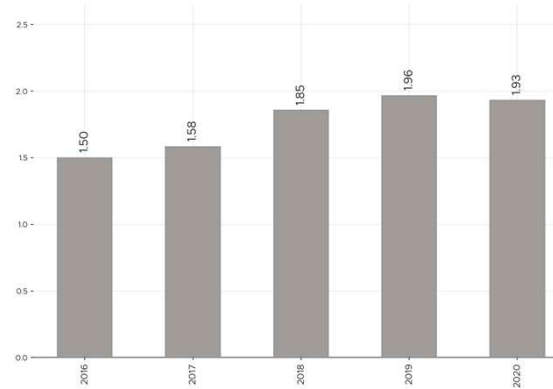
% Over 60
20.7%



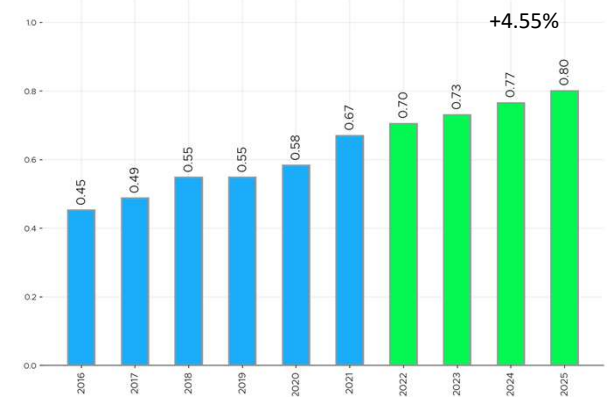
Gdp per capita CAGR 21/25
15,519 € +5.1%

Source: elaboration on data World Bank

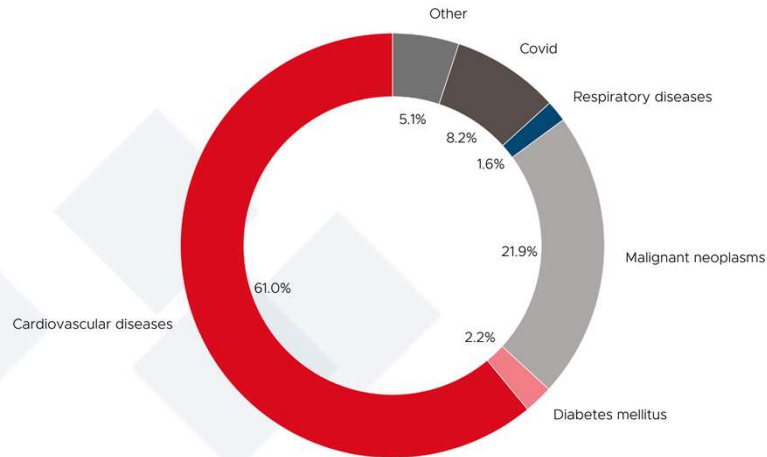
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
1.6 mln €
CAGR 21/25
-3.7%



Lebanon



Population CAGR 16/20
6,825,442 **+0.4%**



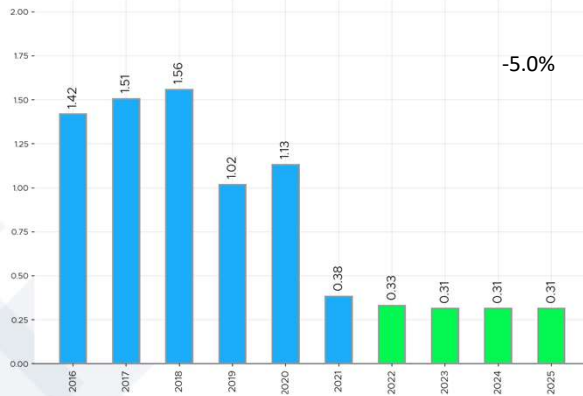
% Over 60
7.5%



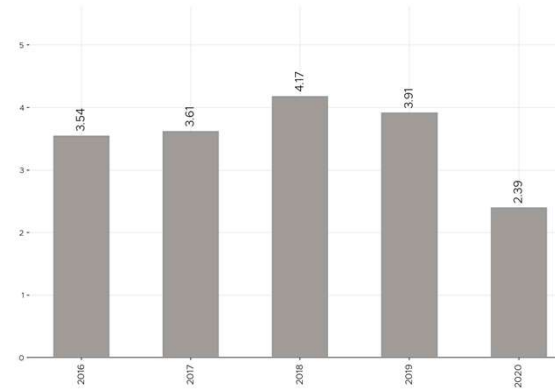
Gdp per capita CAGR 21/25
4,071 € **0.0%**

Source: elaboration on data World Bank

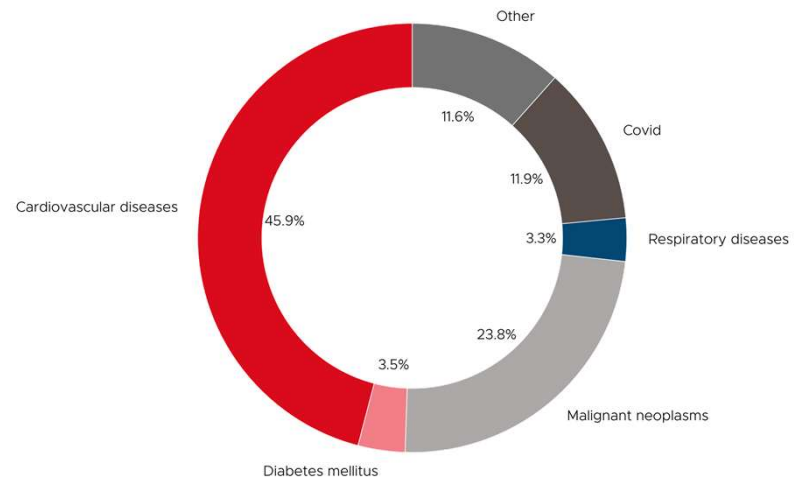
Pharma spending (bln €)



Health Spending (bln €)



Death causes (%)





Lithuania



Population

2,794,700

CAGR 16/20

-0.6%



% Over 60

20.6%



Gdp per capita

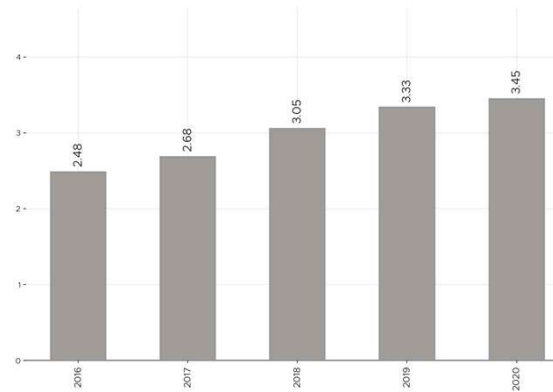
17,715 €

CAGR 21/25

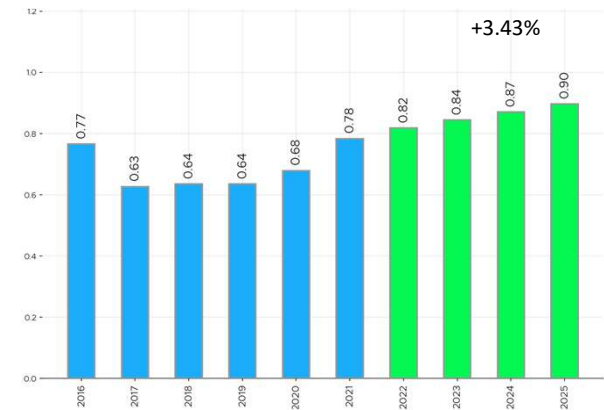
+3.1%

Source: elaboration on data World Bank

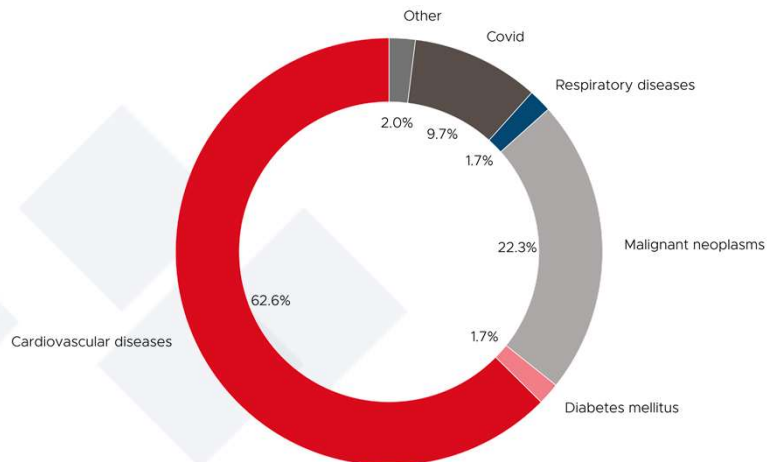
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025

6.3 mln €

CAGR 21/25

-0.9%



Mexico



Population CAGR 16/20
128,932,753 +1.1%



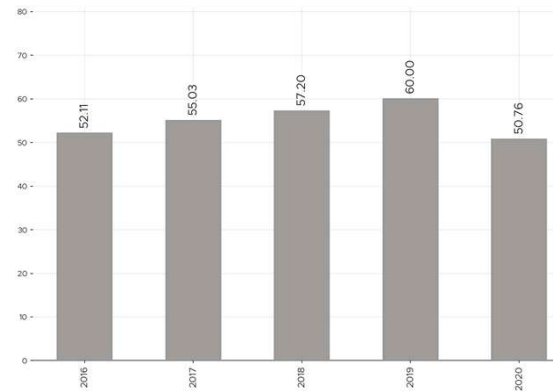
% Over 60
7.6%



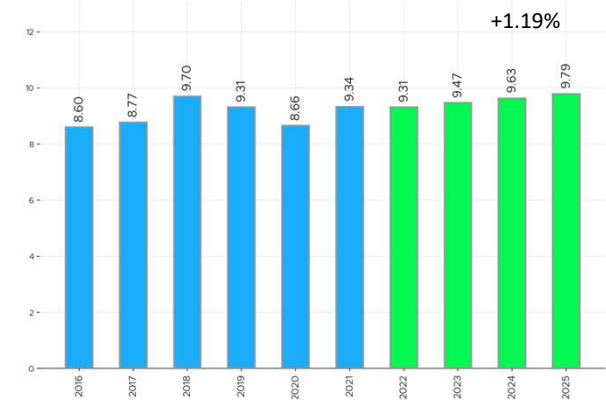
Gdp per capita CAGR 21/25
7,292 € +2.5%

Source: elaboration on data World Bank

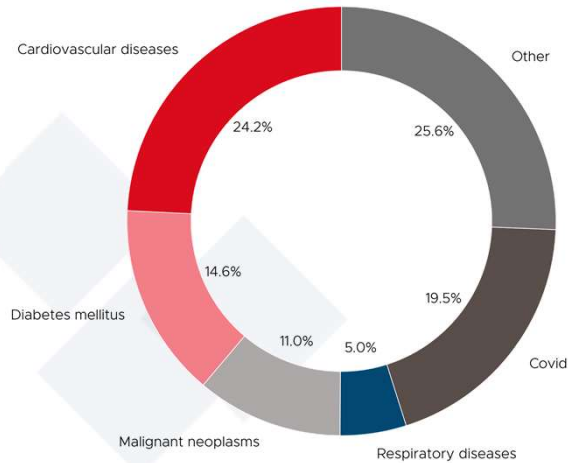
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
89.7 mln €
CAGR 21/25
1.9%



Morocco



Population CAGR 16/20
36,910,558 +1.2%



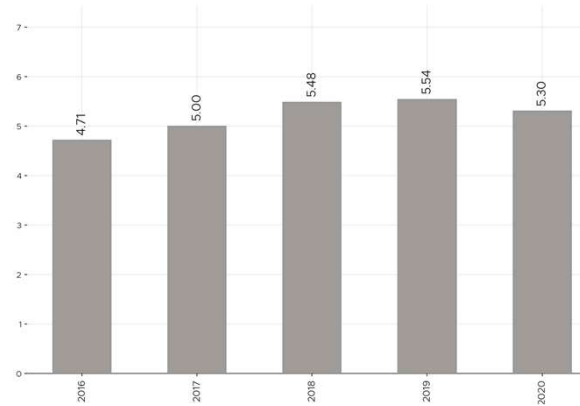
% Over 60
7.6%



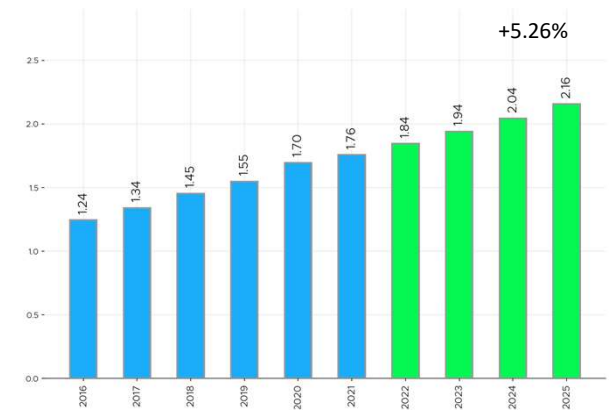
Gdp per capita CAGR 21/25
2,721 € +3.4%

Source: elaboration on data World Bank

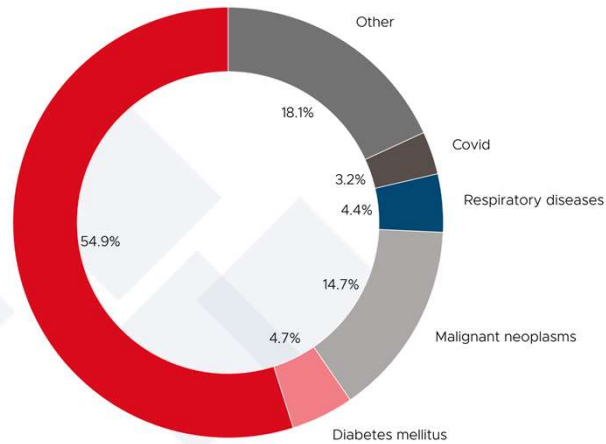
Health Spending (bln €)



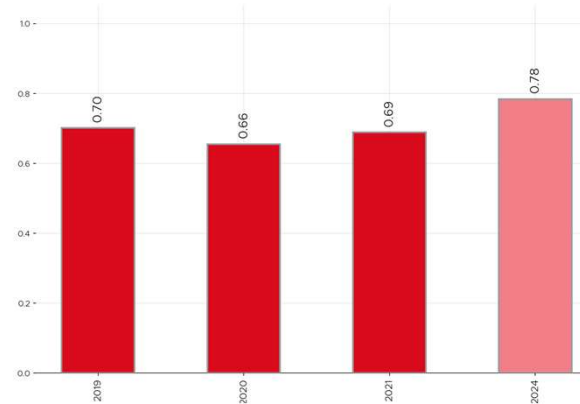
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
11.6 mln €

CAGR 21/25
1.3%



Netherlands



Population

17,441,139

CAGR 16/20

+0.6%



% Over 60

20.0%



Gdp per capita

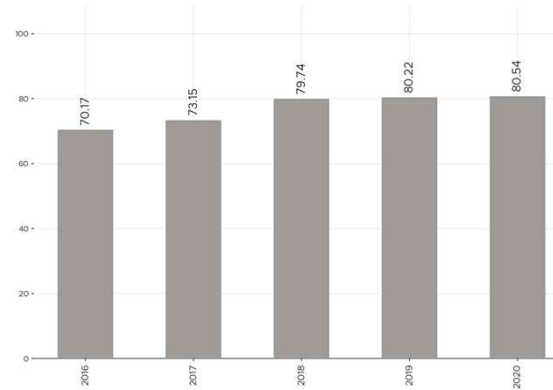
45,874 €

CAGR 21/25

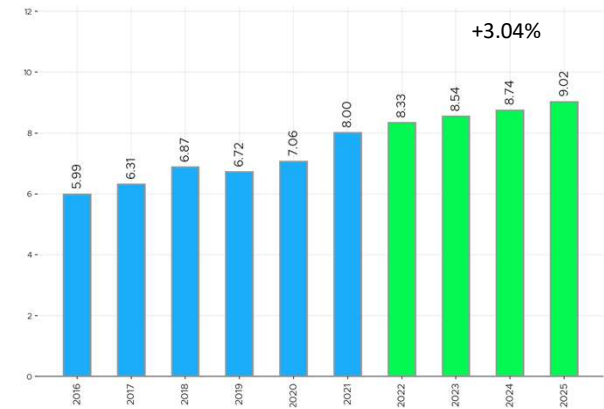
+2.2%

Source: elaboration on data World Bank

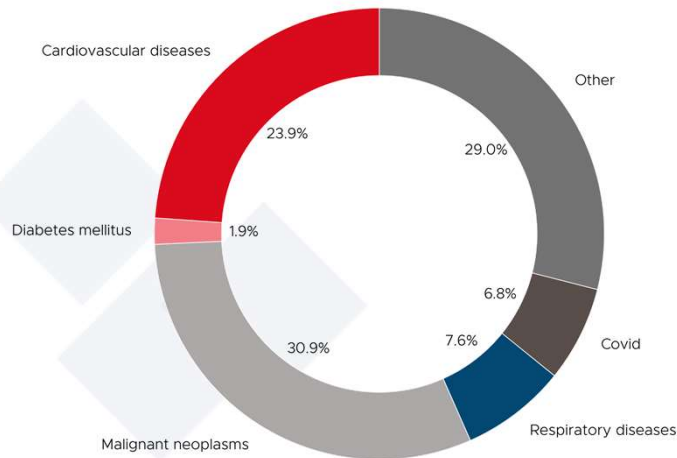
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025

63.9 mln €

CAGR 21/25

-2%



New Zealand



Population CAGR 16/20
5,084,300 **+1.9%**



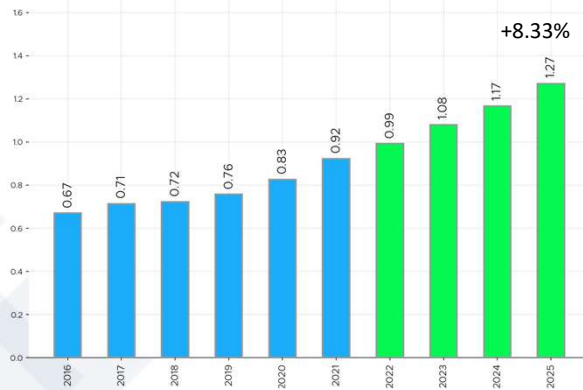
% Over 60
16.4%



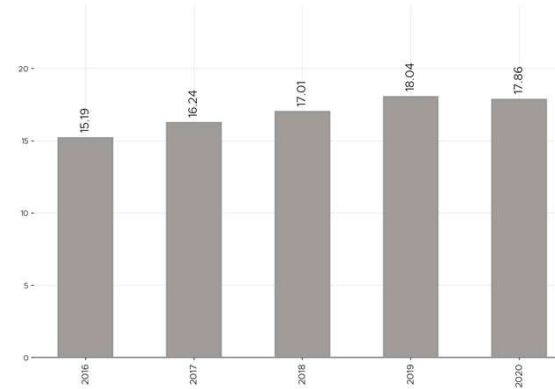
Gdp per capita CAGR 21/25
36,282 € **+2.3%**

Source: elaboration on data World Bank

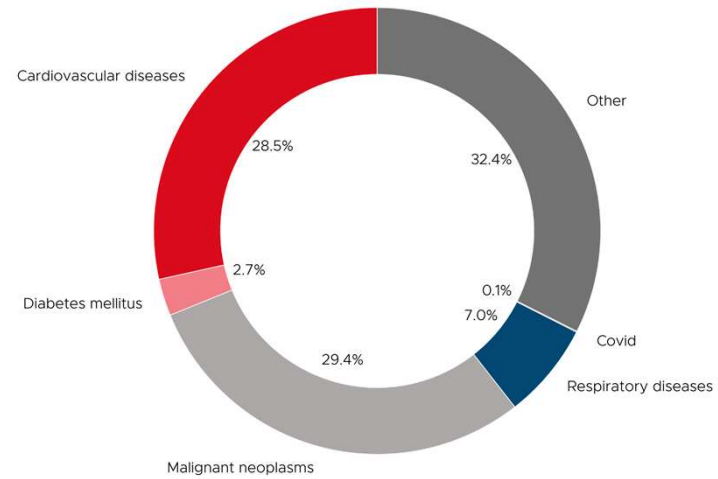
Pharma spending (bln €)



Health Spending (bln €)



Death causes (%)



Nigeria



Population CAGR 16/20
206,139,587 +2.6%



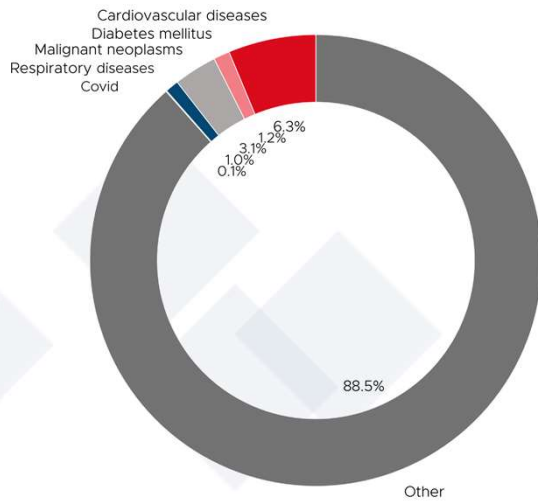
% Over 60
2.7%



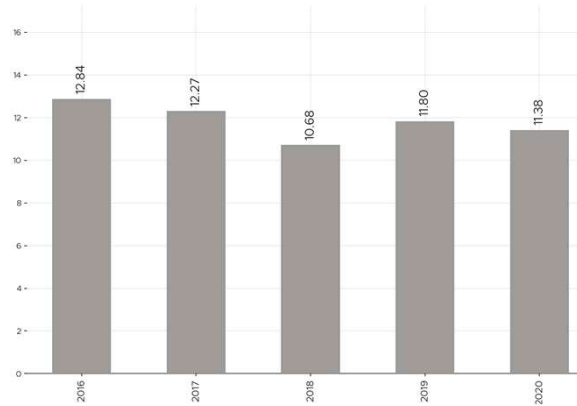
Gdp per capita CAGR 21/25
1,836 € +2.6%

Source: elaboration on data World Bank

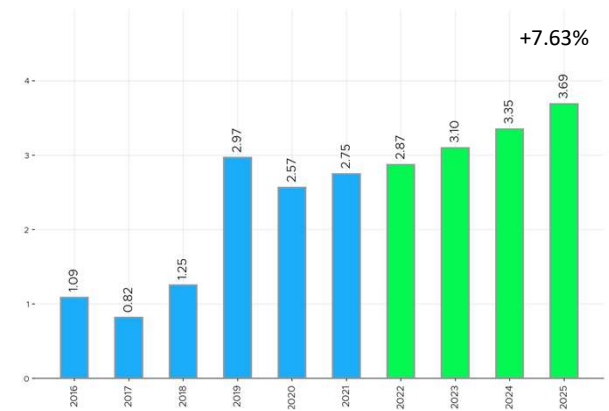
Death causes (%)



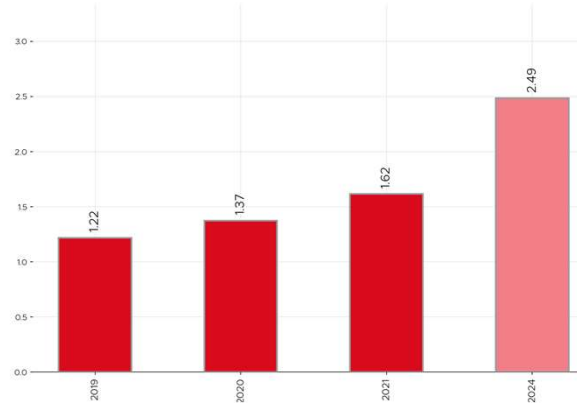
Health Spending (bln €)



Pharma spending (bln €)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

17.0 mln €

CAGR 21/25

-2.9%



Oman



Population CAGR 16/20
5,106,622 **+3.3%**



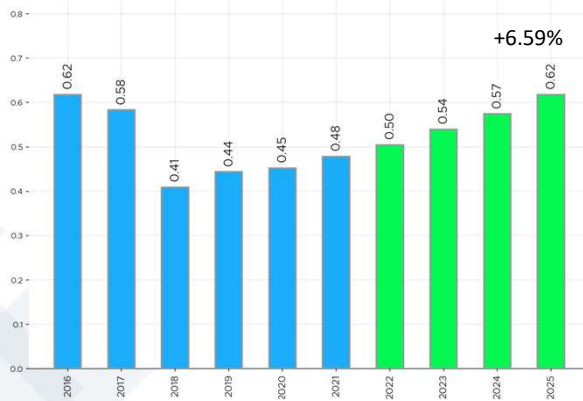
% Over 60
2.5%



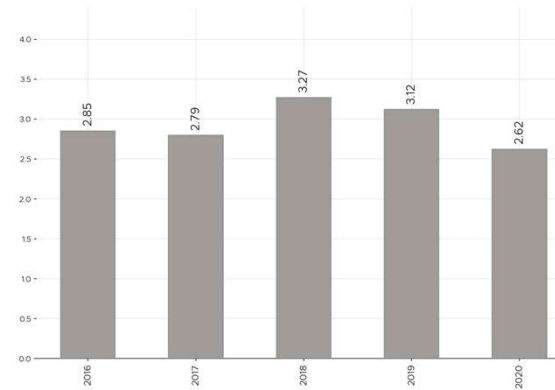
Gdp per capita CAGR 21/25
12,682 € **+3.3%**

Source: elaboration on data World Bank

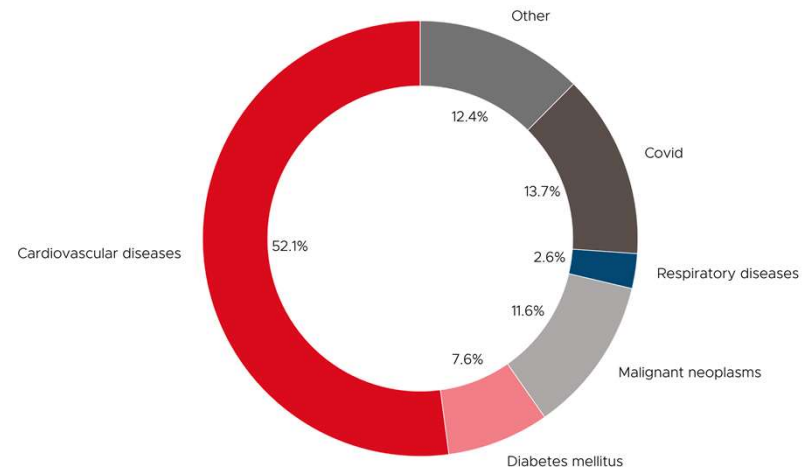
Pharma spending (bln €)



Health Spending (bln €)



Death causes (%)



Poland



Population CAGR 16/20
37,950,802 0.0%



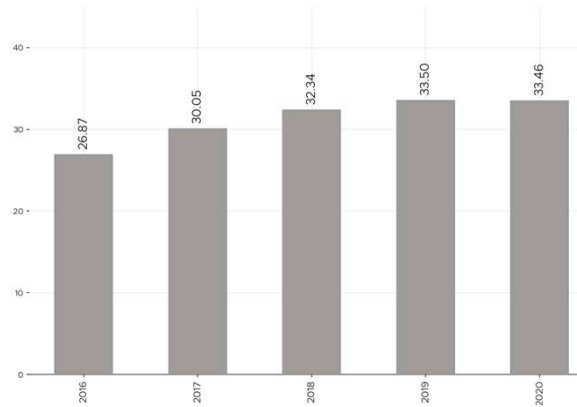
% Over 60
18.7%



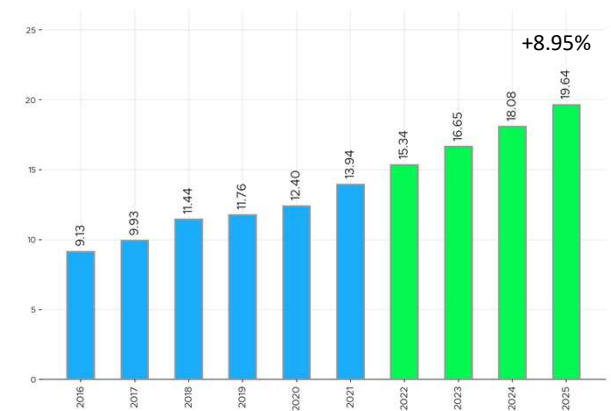
Gdp per capita CAGR 21/25
13,764 € +3.6%

Source: elaboration on data World Bank

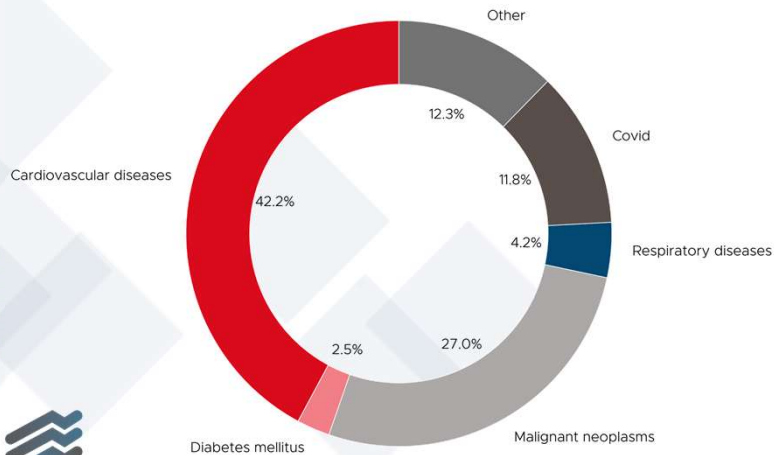
Health Spending (bln €)



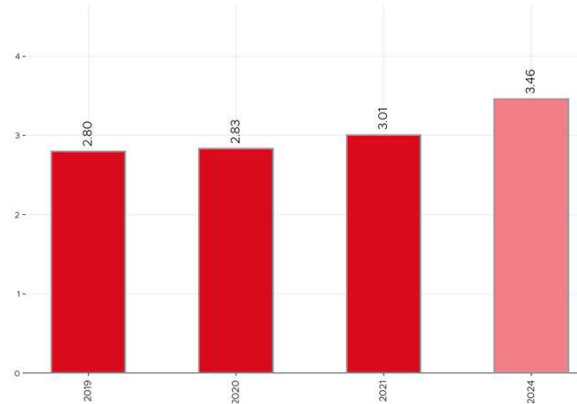
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
95.6 mln €

CAGR 21/25
-2.6%



Portugal



Population CAGR 16/20
10,305,564 **0.0%**



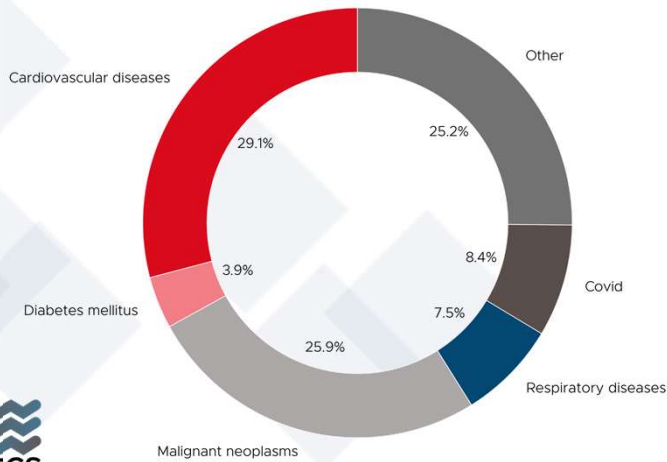
% Over 60
22.8%



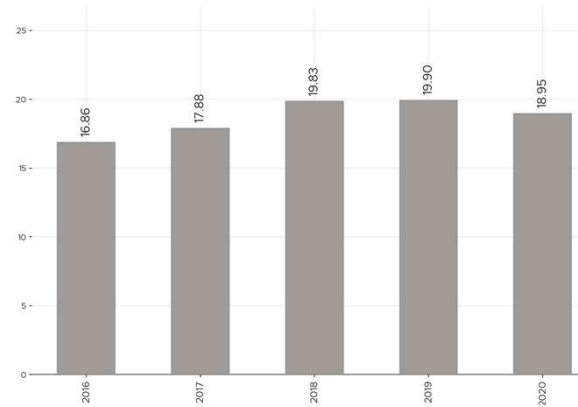
Gdp per capita CAGR 21/25
19,415 € **+2.9%**

Source: elaboration on data World Bank

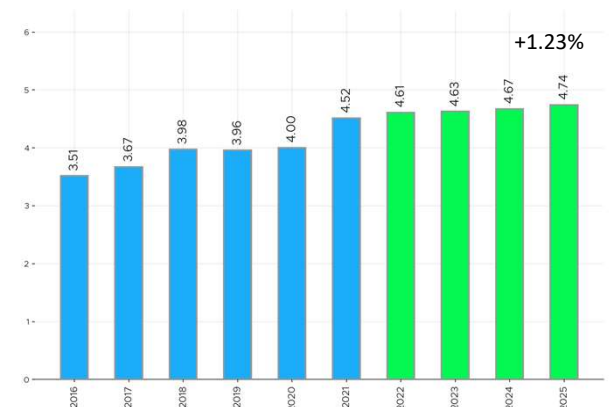
Death causes (%)



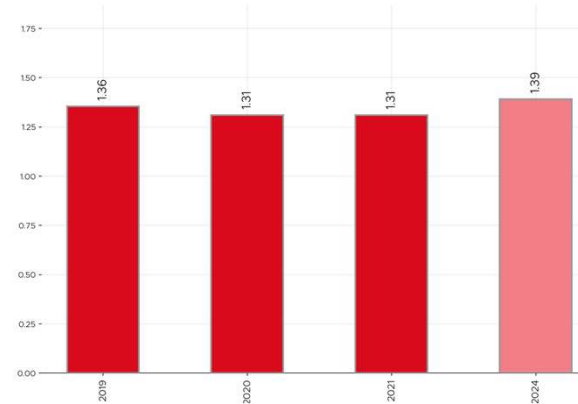
Health Spending (bln €)



Pharma spending (bln €)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
30.6 mln €
CAGR 21/25
4.4%



Qatar



Population CAGR 16/20

2,881,060 +2.1%



% Over 60
1.7%

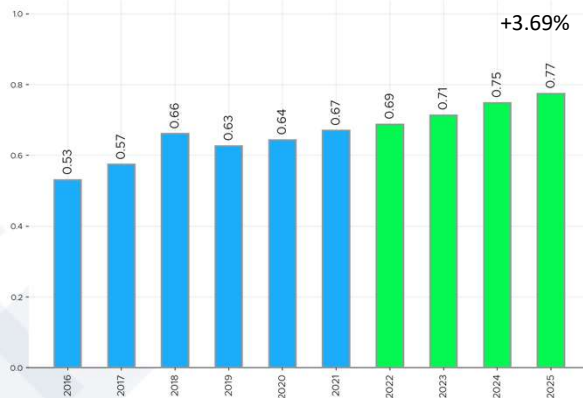


Gdp per capita CAGR 21/25

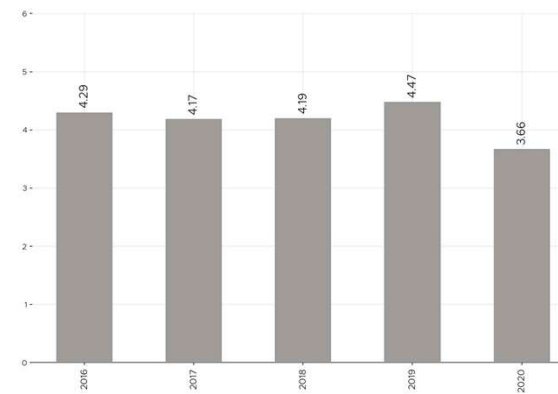
43,884 € +3.6%

Source: elaboration on data World Bank

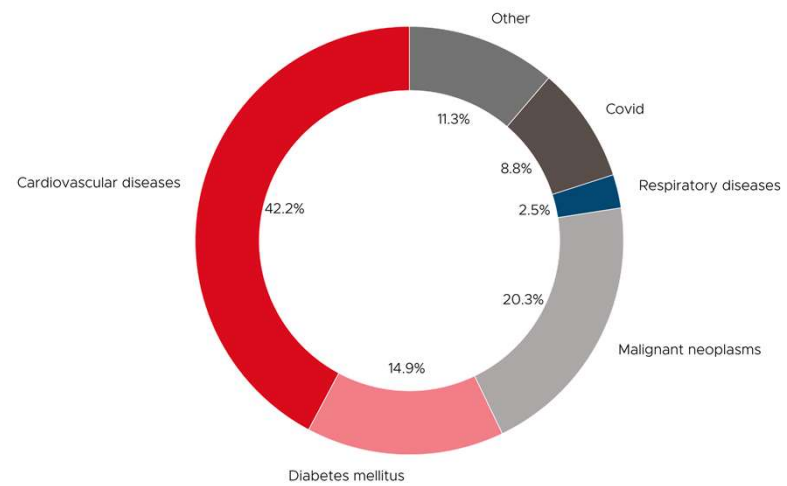
Pharma spending (bln €)



Health Spending (bln €)



Death causes (%)



Russia



Population CAGR 16/20
144,104,080 **0.0%**



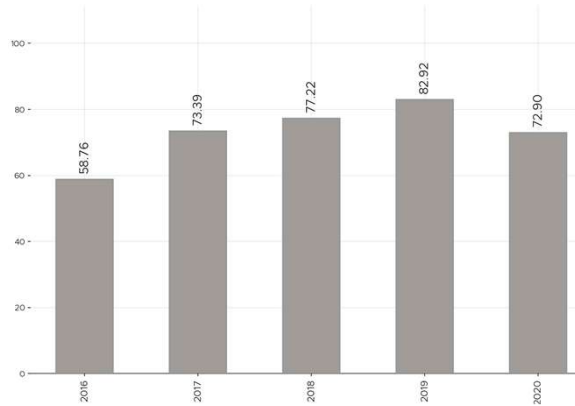
% Over 60
15.5%



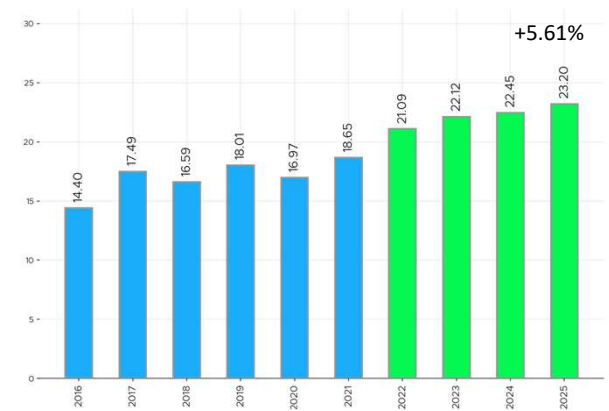
Gdp per capita CAGR 21/25
9,013 € **n.d.**

Source: elaboration on data World Bank

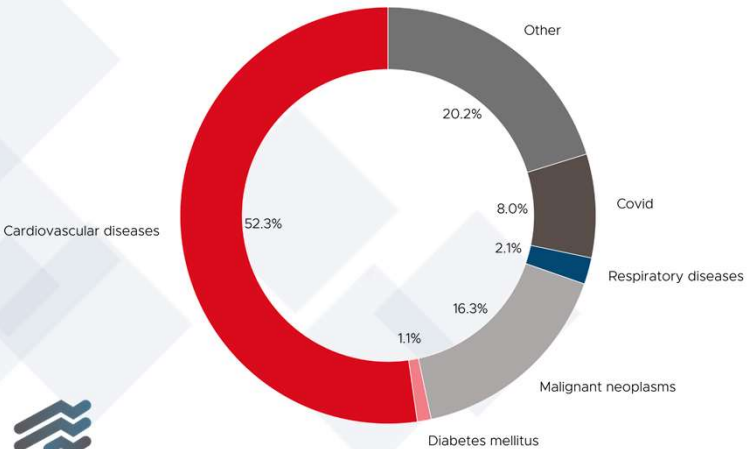
Health Spending (bln €)



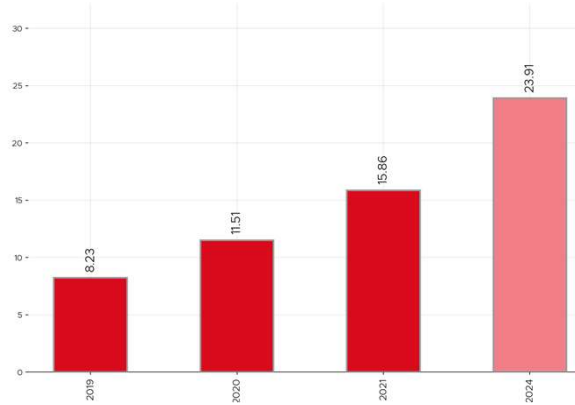
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
139.6 mln €

CAGR 21/25
3.1%



Saudi Arabia



Population CAGR 16/20
34,813,867 +1.8%



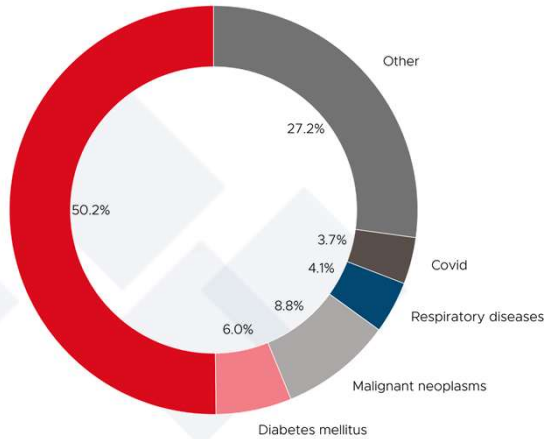
% Over 60
3.5%



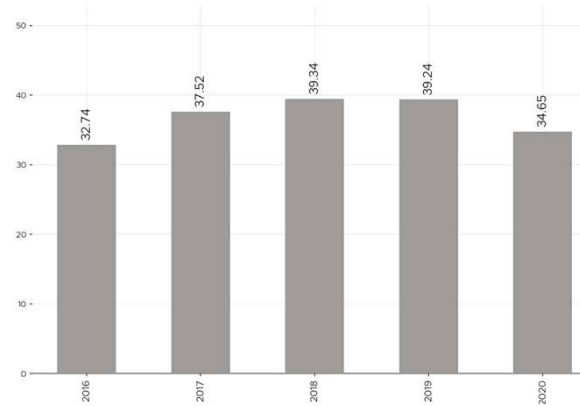
Gdp per capita CAGR 21/25
17,607 € +3.3%

Source: elaboration on data World Bank

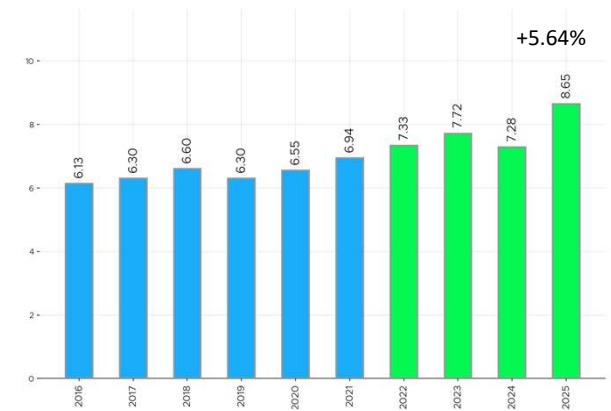
Death causes (%)



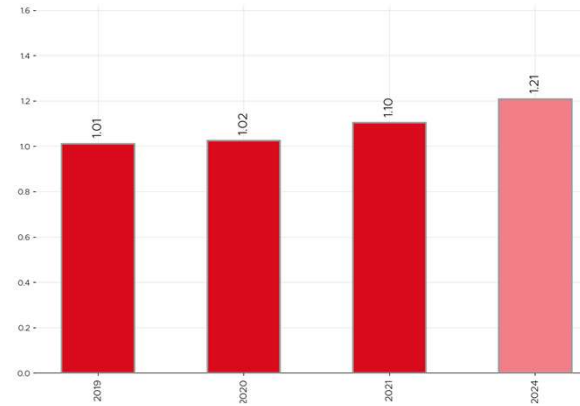
Health Spending (bln €)



Pharma spending (bln €)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
34.9 mln €

CAGR 21/25
4.1%



Spain



Population

47,351,567

CAGR 16/20

+0.5%



% Over 60

20.0%



Gdp per capita

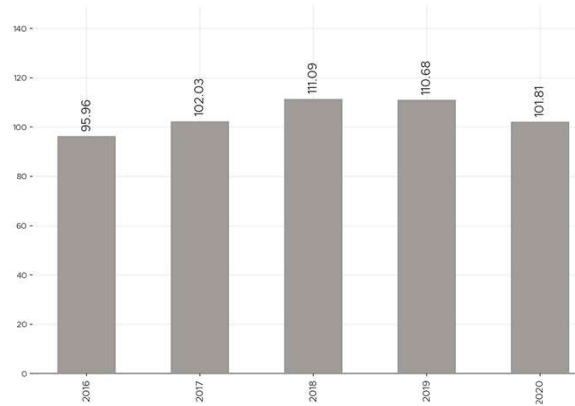
23,694 €

CAGR 21/25

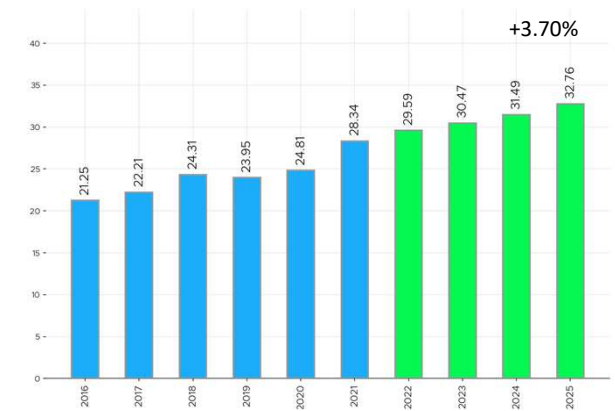
+3.1%

Source: elaboration on data World Bank

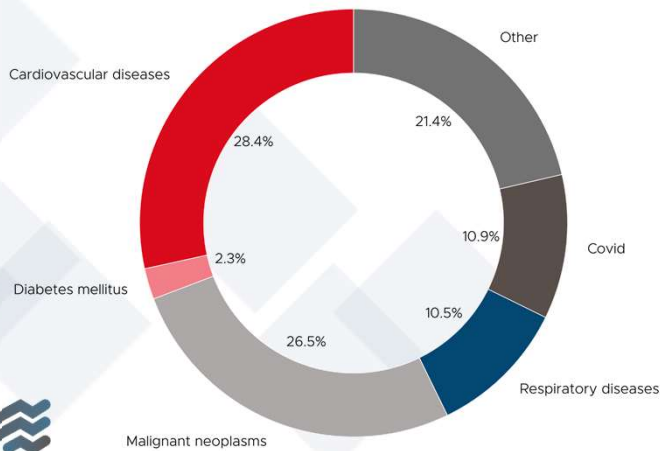
Health Spending (bln €)



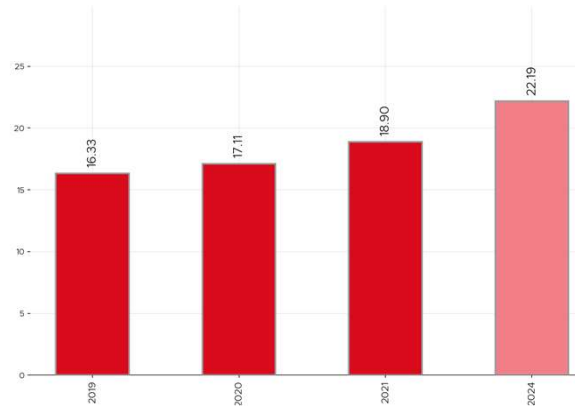
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
208.7 mln €

CAGR 21/25

3.7%



Switzerland



Population

8,636,896

CAGR 16/20

+0.8%



% Over 60

19.1%



Gdp per capita

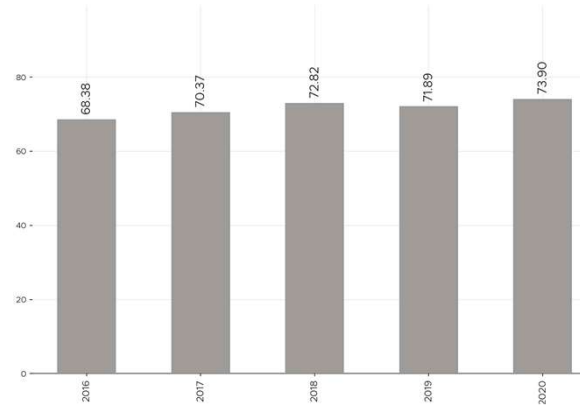
76,254 €

CAGR 21/25

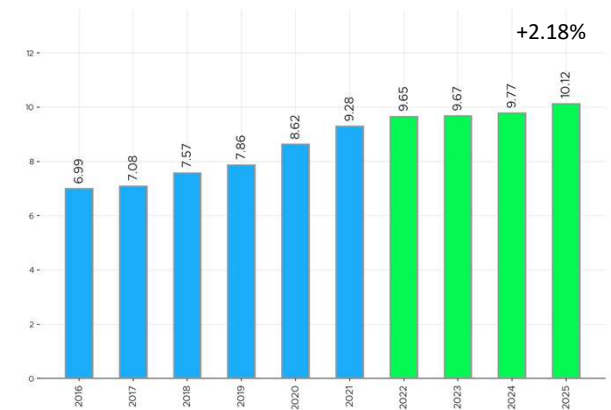
+1.8%

Source: elaboration on data World Bank

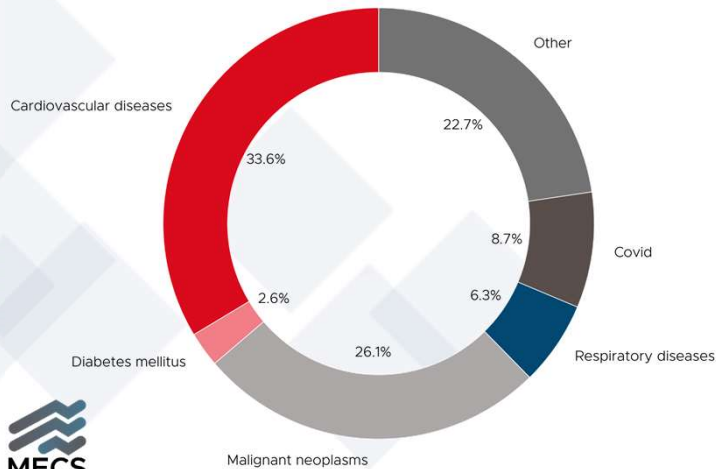
Health Spending (bln €)



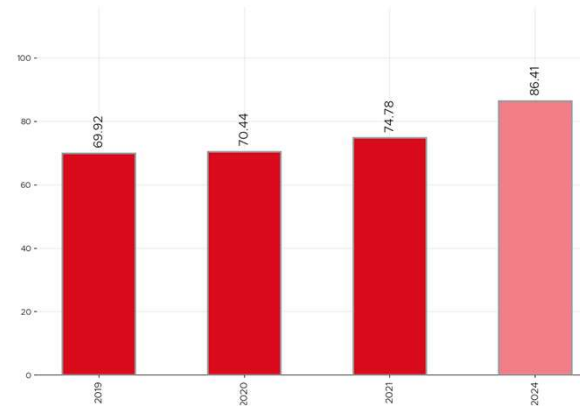
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

48.0 mln €

CAGR 21/25

6.3%



Thailand



Population CAGR 16/20
69,799,978 +0.3%



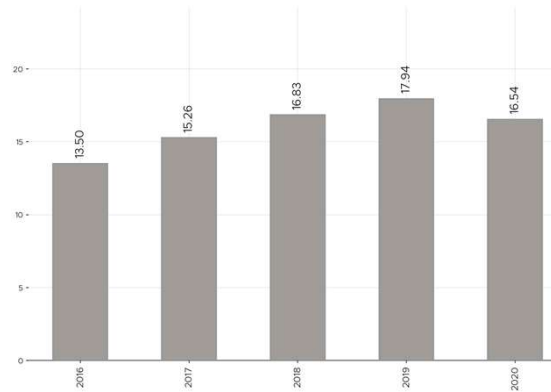
% Over 60
13.0%



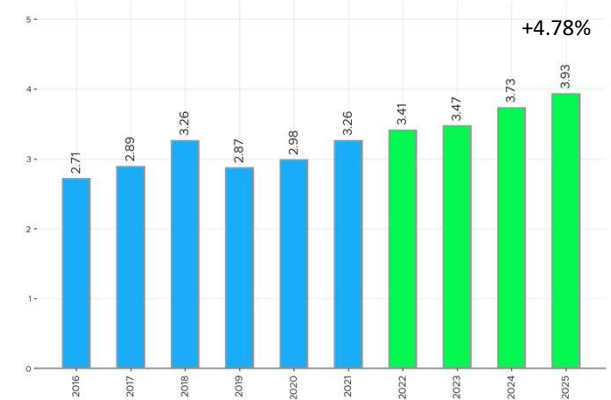
Gdp per capita CAGR 21/25
6,292 € +3.9%

Source: elaboration on data World Bank

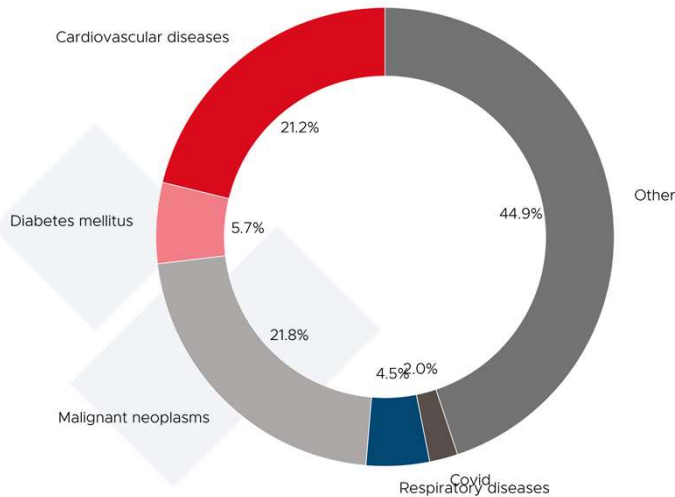
Health Spending (bln €)



Pharma spending (bln €)



Death causes (%)



Pharma packaging machinery



Market value
Forecast 2025
77.7 mln €

CAGR 21/25
6.2%



Turkey



Population

84,339,067

CAGR 16/20

+1.4%



% Over 60

9.0%



Gdp per capita

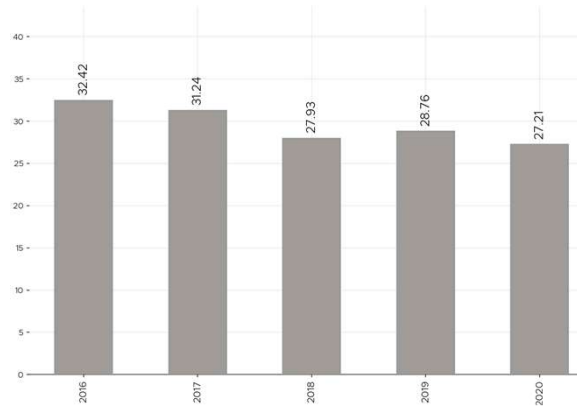
7,474 €

CAGR 21/25

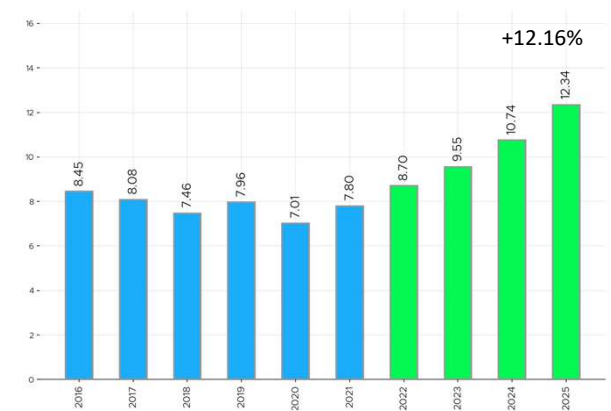
+3.3%

Source: elaboration on data World Bank

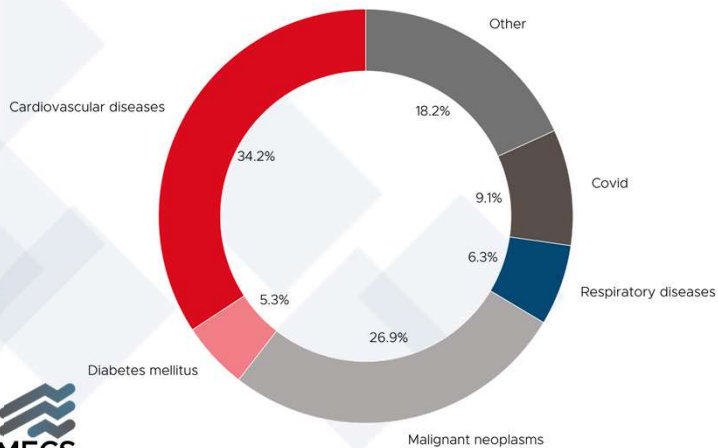
Health Spending (bln €)



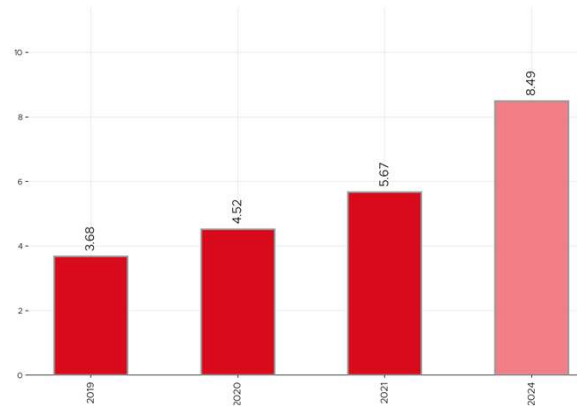
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
122.8 mln €

CAGR 21/25
4.1%



United Arab Emirates



Population

9,890,400

CAGR 16/20

+1.4%



% Over 60

1.3%



Gdp per capita

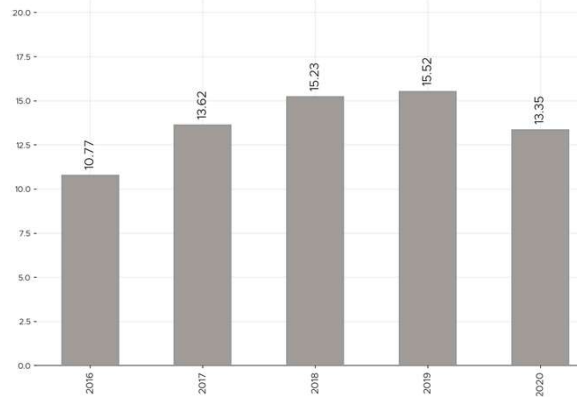
31,767 €

CAGR 21/25

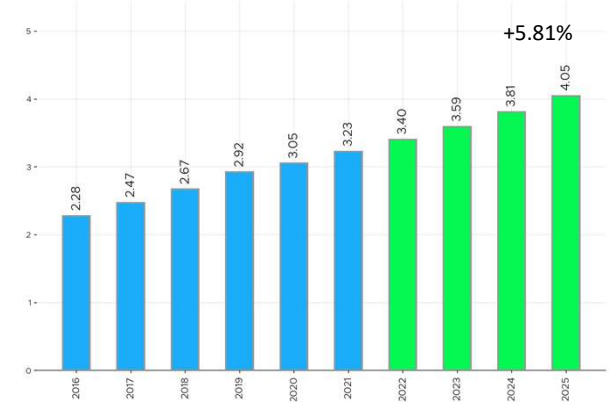
+3.1%

Source: elaboration on data World Bank

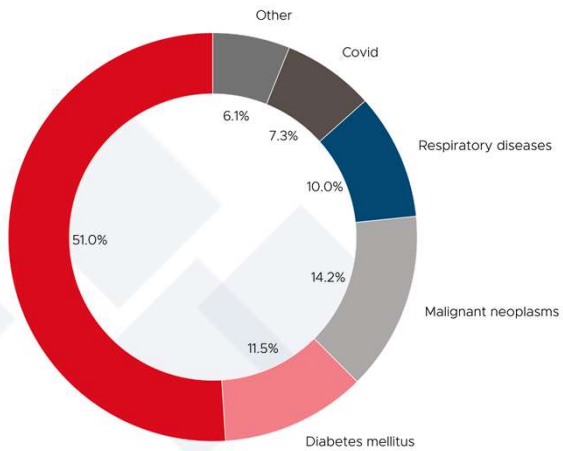
Health Spending (bln €)



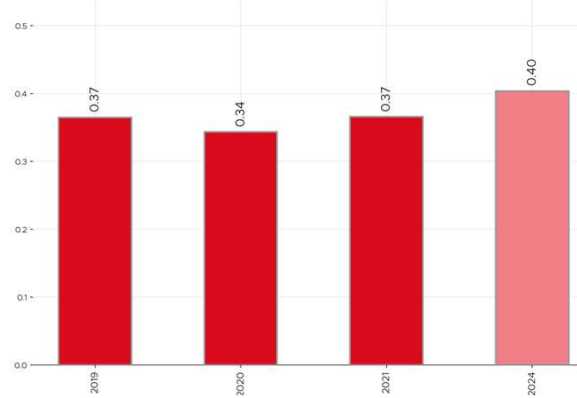
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

22.5 mln €

CAGR 21/25

-0.8%



USA



Population

329,484,123

CAGR 16/20

+0.5%



% Over 60

16.6%



Gdp per capita

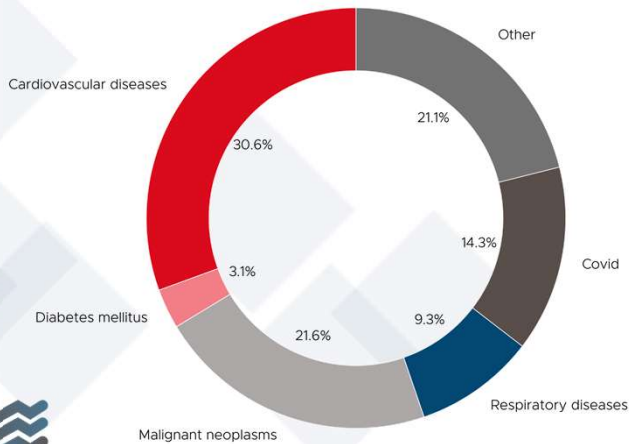
55,676 €

CAGR 21/25

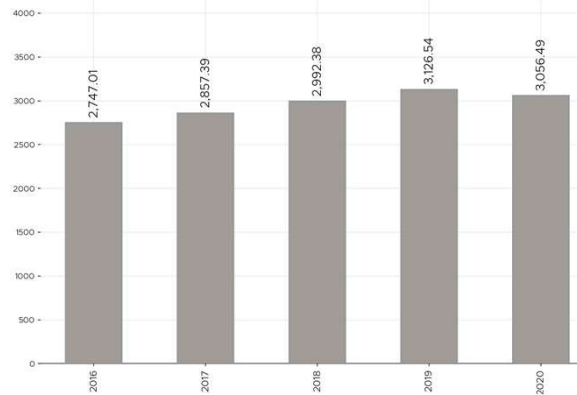
+2.7%

Source: elaboration on data World Bank

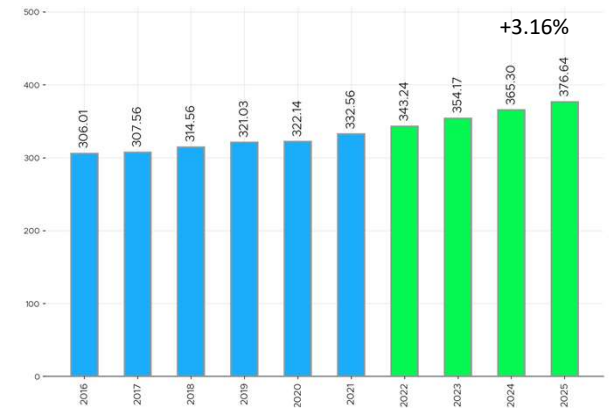
Death causes (%)



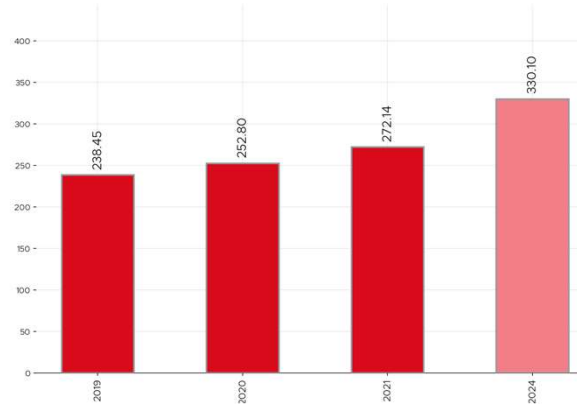
Health Spending (bln €)



Pharma spending (bln €)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025
888.3 mln €

CAGR 21/25

1.8%



Vietnam



Population

97,338,583

CAGR 16/20

+1.0%



% Over 60

7.9%



Gdp per capita

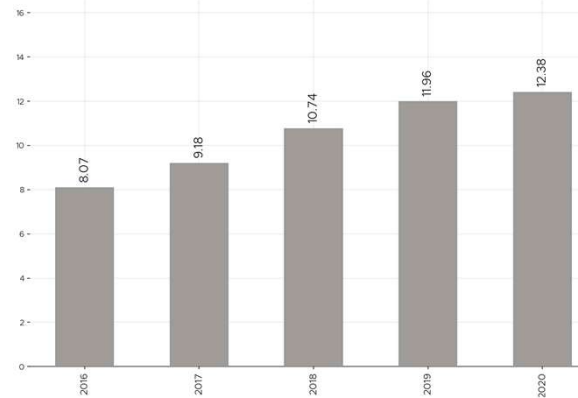
2,439 €

CAGR 21/25

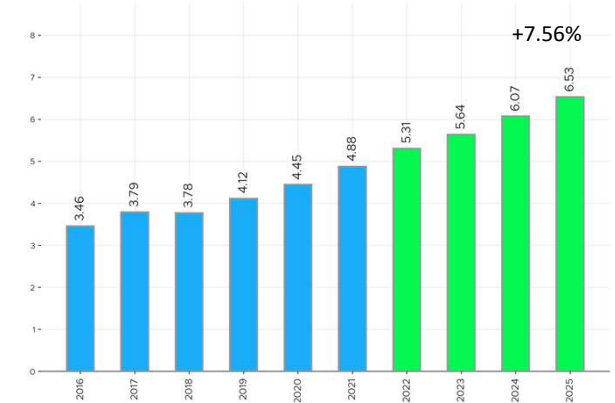
+6.9%

Source: elaboration on data World Bank

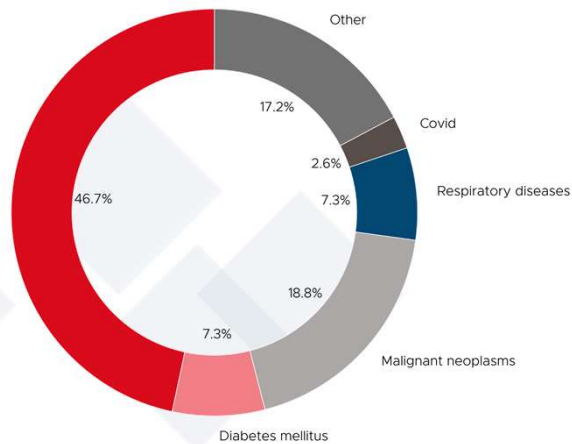
Health Spending (bln €)



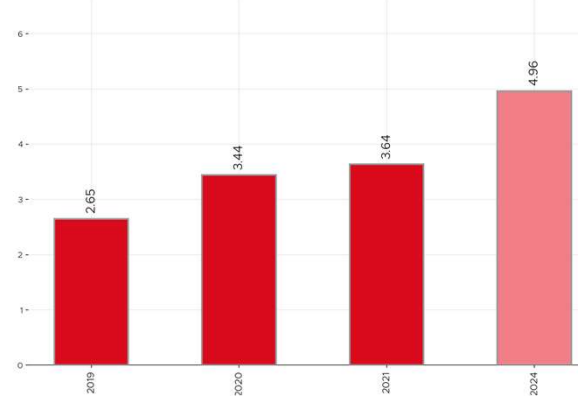
Pharma spending (bln €)



Death causes (%)



Pharma production (bln €)



Pharma packaging machinery



Market value
Forecast 2025

62.5 mln €

CAGR 21/25

5.5%

Sources

Information, data and metadata from, among others, the following sources have been used in this report:

- Agenzia Italiana del Farmaco
- Assosalute
- BPI
- Bureau van Dijk
- CDER
- EFPIA
- EMA
- Euromonitor
- Evaluate Pharma
- Farindustria
- Fitch
- FDA
- Federfarma
- FiercePharma
- IMF
- IMS Health
- IQVIA
- ISTAT
- ITC
- New Line – Ricerche di mercato
- Nielsen
- OECD
- Standard & Poor's
- Torreya Partners
- UCIMA
- WTO

The logo for Pharmintech MONITOR features a blue diamond shape on the left containing three vertical white bars of varying heights, each topped with a small red dot. To the right of this icon, the word "Pharmintech" is written in a bold, red, sans-serif font, and the word "MONITOR" is written below it in a blue, spaced-out, sans-serif font.

Pharmintech MONITOR

Data collection and processing:

Centro Studi UCIMA / MECS (Machinery Economic Studies)

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