

The Pharmaceutical Industry in Figures

Key Data * 2019



THE PHARMACEUTICAL INDUSTRY: A KEY ASSET TO SCIENTIFIC AND MEDICAL PROGRESS

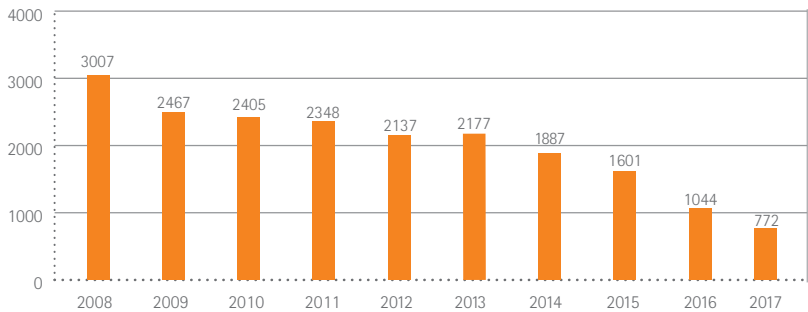
Thanks to advances in science and technology, the research-based pharmaceutical industry is entering an exciting new era in medicines development. Research methods are evolving and we have many promising prospects on the horizon – from the possibilities offered by personalised medicines, to the potential offered by harnessing the power of big data. The innovative pharmaceutical industry is driven by, and drives, medical progress. It aims to turn fundamental research into innovative treatments that are widely available and accessible to patients.

Already, the industry has contributed to significant improvements in patient well-being. Today's European citizens can expect to live up to 30 years longer than they did a century ago. Some major steps in biopharmaceutical research, complimented by many smaller steps, have allowed for reductions in mortality, for instance from HIV/AIDS-related causes and a number of cancers. High blood pressure and cardiovascular diseases can be controlled with antihypertensive and cholesterol-lowering medicines; knee or hip replacements prevent patients from immobility; and some cancers

can be controlled – or even cured – with the help of new targeted treatments. European citizens can expect not only to live longer, but to live better quality lives. Yet major hurdles remain, including Alzheimer's, Multiple Sclerosis, many cancers, and orphan diseases.



TOTAL NUMBER OF DEATHS AMONG AIDS CASES IN EUROPE (TOTAL EU/EEA)



Source: HIV/AIDS surveillance in Europe 2018, WHO Regional Office for Europe & European Centre for Disease Prevention and Control (ECDC), November 2018










THE PHARMACEUTICAL INDUSTRY: A KEY ASSET TO THE EUROPEAN ECONOMY

As well as driving medical progress by researching, developing and bringing new medicines that improve health and quality of life for patients around the world, the research-based pharmaceutical industry

is a key asset of the European economy. It is one of Europe's top performing high-technology sectors.



INDUSTRY (EFPIA total)

| | 2000 | 2010 | 2017 | 2018 |
|--|---------|---------|---------|-------------|
|  Production | 127,504 | 199,400 | 250,868 | 260,000 (e) |
|  Exports (1) (2) | 90,935 | 276,357 | 396,036 | 410,000 (e) |
|  Imports | 68,841 | 204,824 | 294,632 | 305,000 (e) |
|  Trade balance | 22,094 | 71,533 | 101,404 | 105,000 (e) |
|  R&D expenditure | 17,849 | 27,920 | 35,318 | 36,500 (e) |
|  Employment (units) | 554,186 | 670,088 | 760,795 | 765,000 (e) |
|  R&D employment (units) | 88,397 | 117,035 | 114,655 | 115,000 (e) |
|  Total pharmaceutical market value at ex-factory prices | 89,449 | 153,685 | 208,949 | 220,000 (e) |
|  Payment for pharmaceuticals by statutory health insurance systems (ambulatory care only) | 76,909 | 129,464 | 133,775 | 137,000 (e) |

Values in € million unless otherwise stated

(1) Data relate to EU-27, Norway and Switzerland since 2005 (EU-15 before 2005); Croatia and Serbia included since 2010; Turkey included since 2011; Russia included since 2013

(2) Data relating to total exports and total imports include EU-28 intra-trade (double counting in some cases)

Source: EFPIA member associations (official figures) - (e): EFPIA estimate; Eurostat (EU-28 trade data 2000-2018)

MAIN TRENDS

The research-based pharmaceutical industry can play a critical role in restoring Europe to growth and ensuring future competitiveness in an advancing global economy. In 2018 it invested an estimated € 36,500 million in R&D in Europe. It directly employs some 765,000 people and generates about four times more employment indirectly – upstream and downstream – than it does directly. However, the sector faces real challenges. Besides the additional regulatory hurdles and escalating R&D costs, the sector has been severely hit by the impact of fiscal austerity measures introduced by governments across much of Europe since 2010.

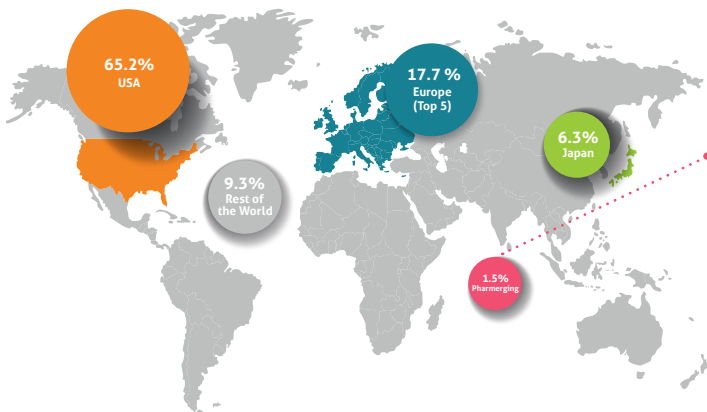
* There is rapid growth in the market and research environment in emerging economies such as Brazil, China and India, leading to a gradual migration of economic and research activities from Europe to these fast-growing markets. During the period 2014-2018 the Brazilian, Chinese and

Indian markets grew by 11.4%, 7.3% and 11.2% respectively compared to an average market growth of 5.0% for the top 5 European Union markets and 7.8% for the US market (source: IQVIA MIDAS, May 2019).

* In 2018 North America accounted for 48.9% of world pharmaceutical sales compared with 23.2% for Europe. According to IQVIA (MIDAS May 2019), 65.2% of sales of new medicines launched during the period 2013-2018 were on the US market, compared with 17.7% on the European market (top 5 markets).

* The fragmentation of the EU pharmaceutical market has resulted in a lucrative parallel trade. This benefits neither social security nor patients and deprives the industry of additional resources to fund R&D. Parallel trade was estimated to amount to €5,408 million (value at ex-factory prices) in 2017.

GEOGRAPHICAL BREAKDOWN (BY MAIN MARKETS) OF SALES OF NEW MEDICINES LAUNCHED DURING THE PERIOD 2013-2018



Note:

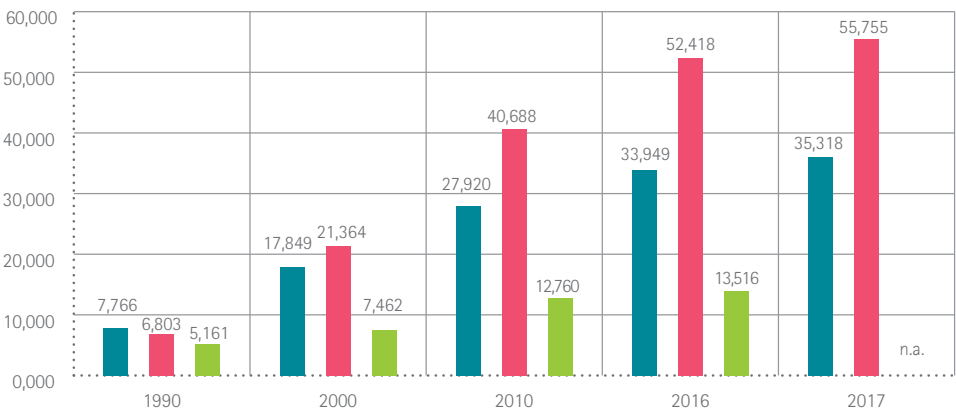
New medicines cover all new active ingredients marketed for the first time on the world market during the period 2013-2018

Europe (Top 5) comprises Germany, France, Italy, Spain and United Kingdom

Pharmerging comprises 21 countries ranked by IQVIA as high-growth pharmaceutical markets (Algeria, Argentina, Bangladesh, Brazil, Colombia, Chile, China, Egypt, India, Indonesia, Kazakhstan, Mexico, Nigeria, Pakistan, Philippines, Poland, Russia, Saudi Arabia, South Africa, Turkey and Vietnam)

Source: IQVIA
(MIDAS May 2019)

PHARMACEUTICAL R&D EXPENDITURE IN EUROPE, USA AND JAPAN
(MILLION OF NATIONAL CURRENCY UNITS*), 1990–2017



* *Note:* Europe: € million; USA: \$ million; Japan: ¥ million x 100

Source: EFPIA member associations, PhRMA, JPMA



Europe

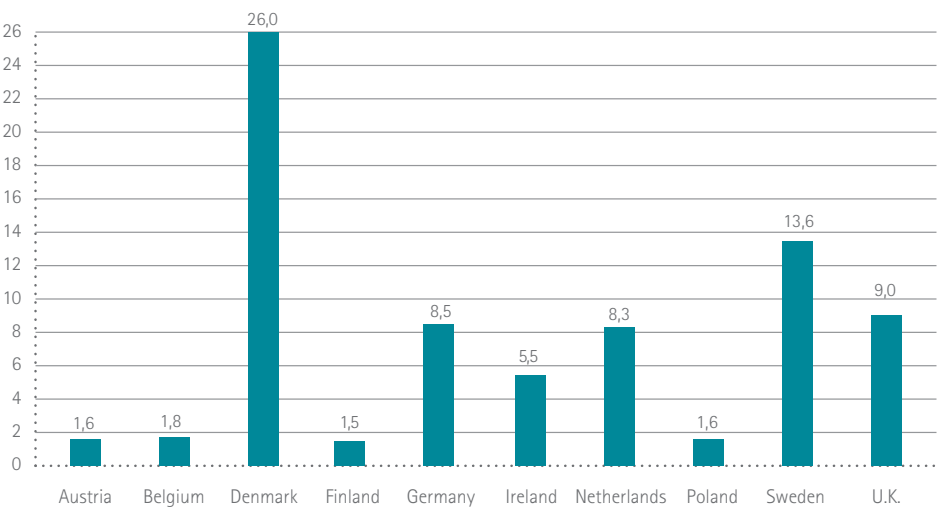


USA



Japan

SHARE OF PARALLEL IMPORTS IN PHARMACY MARKET SALES (%) – 2017



Note: U.K.: in % of pharmacy market sales at reimbursement prices

Source: EFPIA member associations (estimate)

PHARMACEUTICAL INDUSTRY RESEARCH AND DEVELOPMENT IN EUROPE

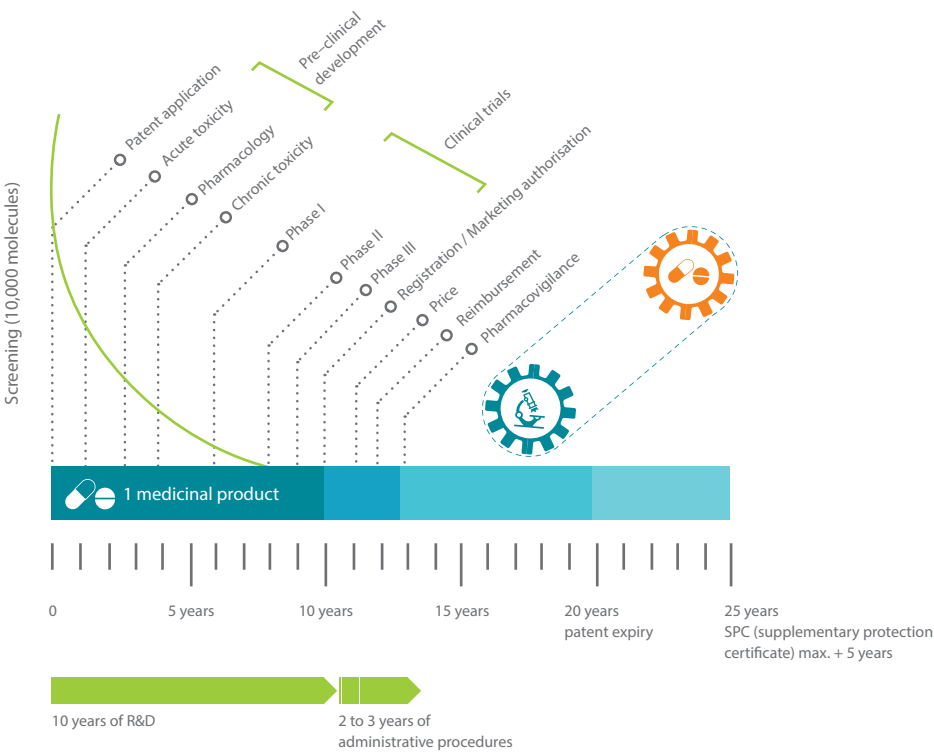
All new medicines introduced into the market are the result of lengthy, costly and risky research and development (R&D) conducted by pharmaceutical companies:

* By the time a medicinal product reaches the market, an average of 12-13 years will have elapsed since the first synthesis of the new active substance;

* The cost of researching and developing a new chemical or biological entity was estimated at € 1,926 million (\$ 2,558 million in year 2013 dollars) in 2014 (DiMasi et al, Journal of Health Economics, January 2016);

* On average, only one to two of every 10,000 substances synthesised in laboratories will successfully pass all stages of development required to become a marketable medicine.

PHASES OF THE RESEARCH AND DEVELOPMENT PROCESS



PHARMACEUTICAL INDUSTRY RESEARCH AND DEVELOPMENT IN EUROPE

| EFPIA 2017 | € million | | € million |
|--------------|-----------|-------------|---------------|
| Austria | 294 | Latvia | n.a |
| Belgium | 3,508 | Lithuania | n.a |
| Bulgaria | n.a | Malta | n.a |
| Croatia | 40 | Netherlands | 642 |
| Cyprus | 85 | Norway | 126 |
| Czech Rep. | 77 | Poland | 340 |
| Denmark | 1,632 | Portugal | 100 |
| Estonia | n.a | Romania | 101 |
| Finland | 201 | Russia | 856 |
| France | 4,451 | Slovakia | n.a |
| Germany | 6,918 | Slovenia | 180 |
| Greece | 42 | Spain | 1,147 |
| Hungary | 176 | Sweden | 1,104 |
| Iceland | n.a | Switzerland | 6,105 |
| Ireland | 305 | Turkey | 66 |
| Italy | 1,530 | U.K. | 5,292 |
| TOTAL | | | 35,318 |

Note:

The figures relate to the R&D carried out in each country.

Slovenia, Turkey: 2016 data; Austria, France, Greece, Norway, Sweden: 2015 data; Cyprus, Ireland: 2013 data;

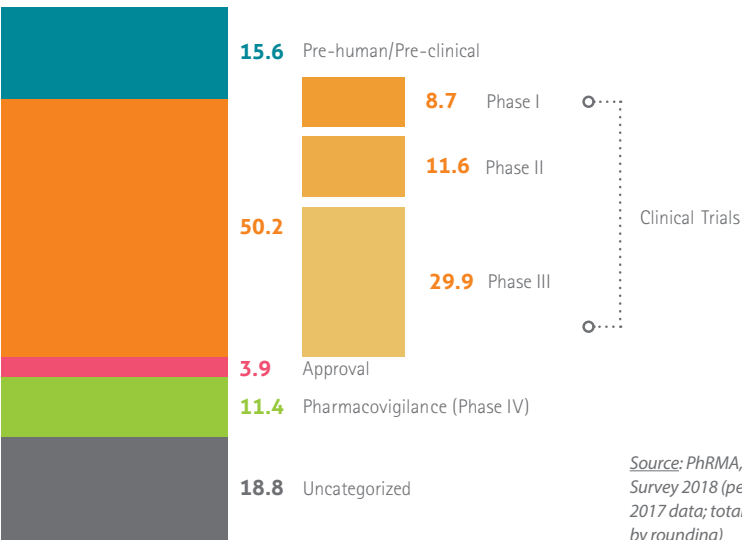
Czech Republic: 2012 data; Croatia, Netherlands: 2011 data

Belgium, Croatia, Denmark, France, Germany, Greece, Ireland, Italy, Netherlands, Norway (LMI members), Poland, Romania, Slovenia, Sweden (LIF members), Switzerland (Interpharma members), Turkey: estimate

Source: EFPIA member associations (official figures)

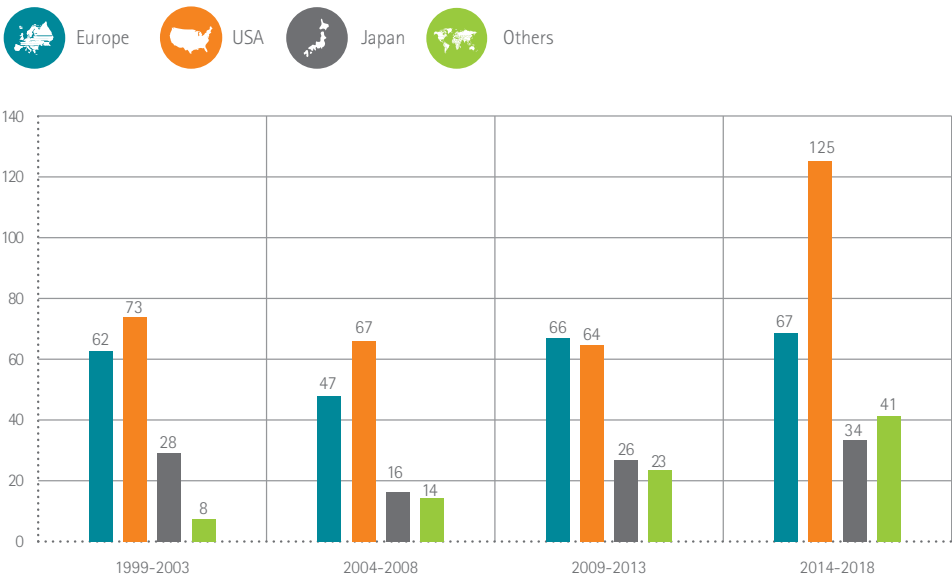


ALLOCATION OF R&D INVESTMENTS BY FUNCTION (%)



Source: PhRMA, Annual Membership Survey 2018 (percentages calculated from 2017 data; total values may be affected by rounding)

NUMBER OF NEW CHEMICAL OR BIOLOGICAL ENTITIES (1999-2018)



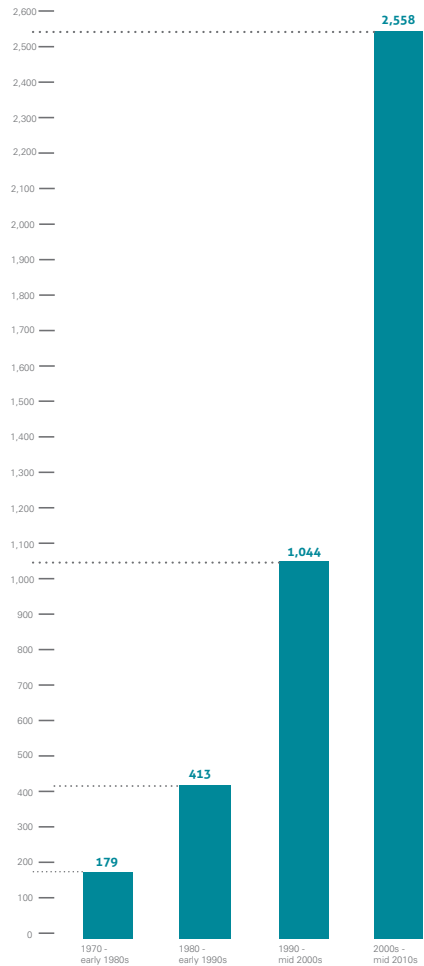
Source: SCRIIP – EFPIA calculations (according to nationality of mother company)

IMPORTANCE OF PHARMACEUTICAL R&D

In 2017 the pharmaceutical industry invested more than € 35,300 million in R&D in Europe. A decade of strong US market dominance led to a significant shift of economic and research activity towards the US during the period 1995-2005. Additionally, Europe is now facing increasing competition from emerging economies: rapid growth in the market and research environments in countries such as Brazil and China are contributing to the move of economic and research activities to non-European markets. The geographical balance of the pharmaceutical market – and ultimately the R&D base – is likely to shift gradually towards emerging economies.

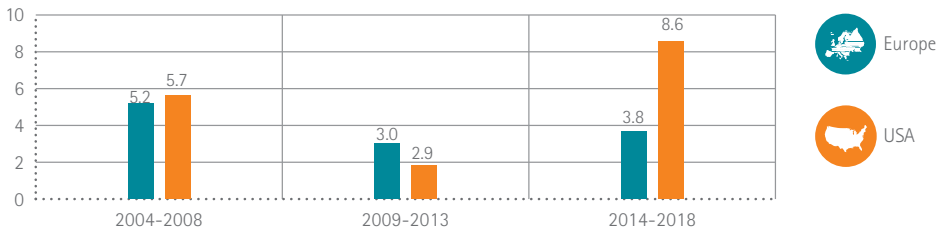
ESTIMATED FULL COST OF BRINGING A NEW CHEMICAL OR BIOLOGICAL ENTITY TO MARKET (\$ MILLION – YEAR 2013 \$)

Source: Joseph. A. DiMasi, Henry G. Grabowski, Ronald W.Hansen, Innovation in the pharmaceutical industry: New estimates of R&D costs, Journal of Health Economics, 47 (2016), 20-33

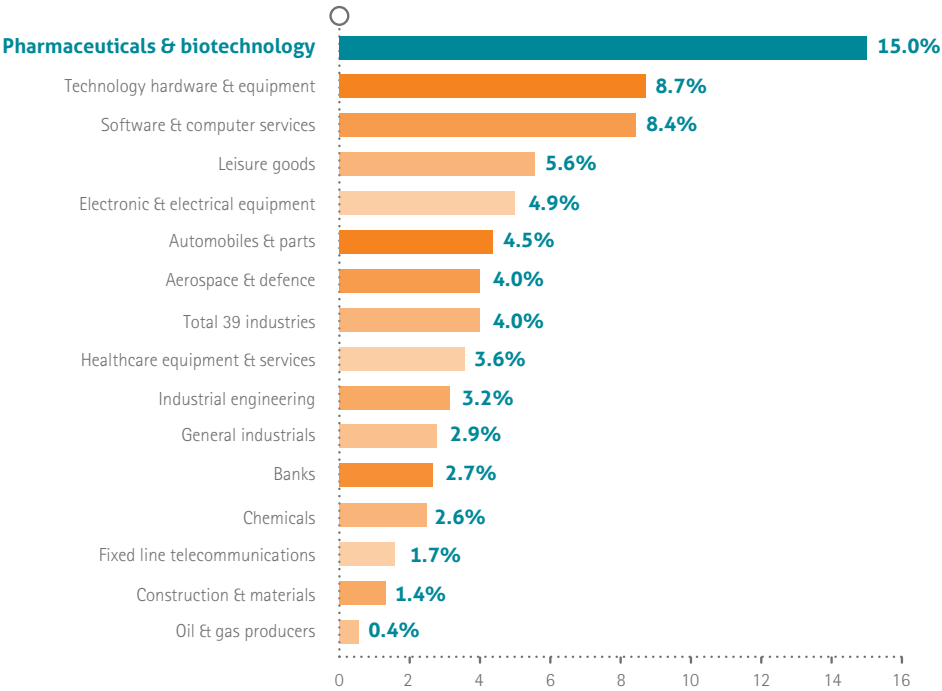


PHARMACEUTICAL R&D EXPENDITURE – ANNUAL GROWTH RATE (%)

Note: USA: data relating to period 2014-2017
Source: EFPIA, PhRMA



RANKING OF INDUSTRIAL SECTORS BY OVERALL SECTOR R&D INTENSITY
(R&D AS PERCENTAGE OF NET SALES – 2018)



Note:
Data relate to the top 2,500 companies with registered offices in the EU (577), Japan (339), the US (778), China (438) and the Rest of the World (368), ranked by total worldwide R&D investment (with investment in R&D above € 25 million).
Source: The 2018 EU Industrial R&D Investment Scoreboard, European Commission, JRC/DG RTD

According to EUROSTAT data, the pharmaceutical industry is the high technology sector with the highest added-value per person employed, significantly higher than the average value for high-tech and manufacturing industries. The pharmaceutical industry is also the sector with the highest ratio of R&D investment to net sales.

According to the 2018 EU Industrial R&D Investment Scoreboard the pharmaceutical and biotechnology sector amounts to 18.9% of total business R&D expenditure worldwide.

PHARMACEUTICAL PRODUCTION

| EFPIA 2017 | € million | | € million |
|------------|-----------|-------------|-----------|
| Austria | 2,712 | Latvia | 157 |
| Belgium | 10,768 | Lithuania | n.a |
| Bulgaria | 121 | Malta | n.a |
| Croatia | 585 | Netherlands | 6,180 |
| Cyprus | 180 | Norway | 1,072 |
| Czech Rep. | n.a | Poland | 3,172 |
| Denmark | 14,391 | Portugal | 1,694 |
| Estonia | n.a | Romania | 655 |
| Finland | 1,766 | Russia | 5,052 |
| France | 21,900 | Slovakia | 356 |
| Germany | 30,555 | Slovenia | 2,083 |
| Greece | 954 | Spain | 15,199 |
| Hungary | 3,044 | Sweden | 7,686 |
| Iceland | 89 | Switzerland | 44,944 |
| Ireland | 19,305 | Turkey | 4,439 |
| Italy | 31,200 | U.K. | 20,609 |
| TOTAL | | 250,868 | |

Note:

All data based on SITC 54

Iceland, Turkey: 2016 data; Bulgaria: 2015 data; Ireland: 2014 data; Romania: 2013 data; Cyprus, Netherlands: 2010 data
Croatia, Denmark, France, Ireland, Italy, Netherlands, Norway, Portugal, Slovakia, Slovenia, Spain, Sweden, Switzerland: estimate
Bulgaria, Croatia, Cyprus, France, Germany, Hungary, Ireland, Latvia, Norway, Poland, Portugal, Romania, Slovakia, Slovenia,
Sweden: veterinary products excluded

Source: EFPIA member associations (official figures)



EMPLOYMENT IN THE PHARMACEUTICAL INDUSTRY

| EFPIA 2017 | Units | | Units |
|------------|---------|-------------|---------|
| Austria | 14,860 | Latvia | 2,154 |
| Belgium | 35,711 | Lithuania | 1,220 |
| Bulgaria | 11,500 | Malta | 1,057 |
| Croatia | 5,474 | Netherlands | 17,900 |
| Cyprus | 1,140 | Norway | 3,800 |
| Czech Rep. | 10,083 | Poland | 29,873 |
| Denmark | 26,963 | Portugal | 7,700 |
| Estonia | 380 | Romania | 30,000 |
| Finland | 4,722 | Russia | n.a |
| France | 98,786 | Slovakia | 2,287 |
| Germany | 117,013 | Slovenia | 9,954 |
| Greece | 19,700 | Spain | 42,687 |
| Hungary | 29,400 | Sweden | 11,012 |
| Iceland | 500 | Switzerland | 46,503 |
| Ireland | 29,766 | Turkey | 20,000 |
| Italy | 65,400 | U.K. | 63,250 |
| TOTAL | | | 760,795 |

Note:

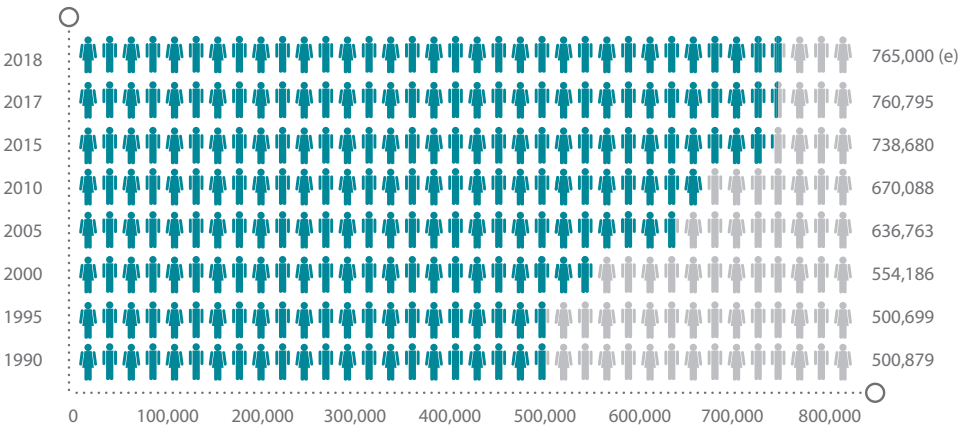
Estonia, Netherlands, Norway, Turkey: 2016 data; Sweden: 2014 data; Denmark, Lithuania: 2013 data; Cyprus: 2007 data
Austria, Belgium, Bulgaria, Croatia, Estonia, France, Ireland, Italy, Malta, Netherlands, Norway, Poland, Romania, Slovenia,
Sweden, Switzerland, Turkey, United Kingdom: estimate

Source: EFPIA member associations (official figures)

The research-based pharmaceutical industry is one of Europe's major high-technology industrial employers. Recent studies in some countries showed that the research-based pharmaceutical industry generates about four times more employment indirectly - upstream and downstream - than it does

directly. Furthermore, a significant proportion of these are valuable skilled jobs, for instance in the fields of academia or clinical science, which can help maintain a high-level knowledge base and prevent a European "brain drain".

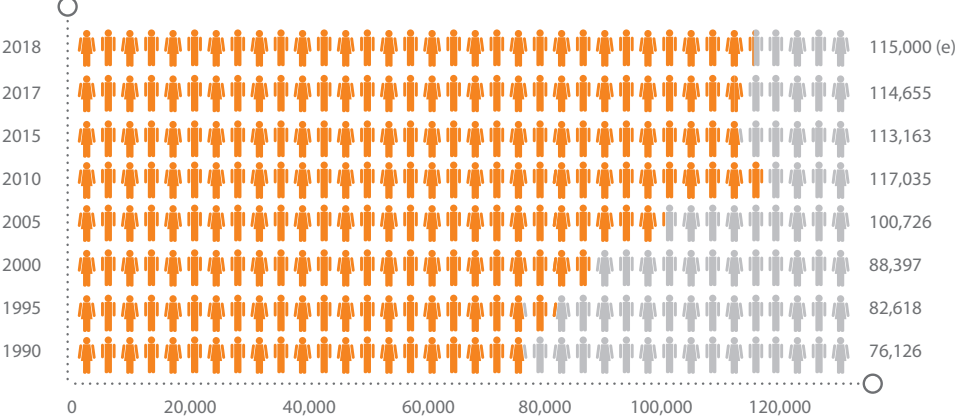
EMPLOYMENT IN THE PHARMACEUTICAL INDUSTRY (1990–2018)



Note:
Data includes Iceland (since 2017), Turkey (since 2011), Croatia and Lithuania (since 2010), Bulgaria, Estonia and Hungary (since 2009), Czech Republic (since 2008), Cyprus (since 2007), Latvia, Romania & Slovakia (since 2005), Malta, Poland and Slovenia (since 2004)

Source: EFPIA member associations (official figures) - (e): EFPIA estimate

EMPLOYMENT IN PHARMACEUTICAL R&D (1990–2018)



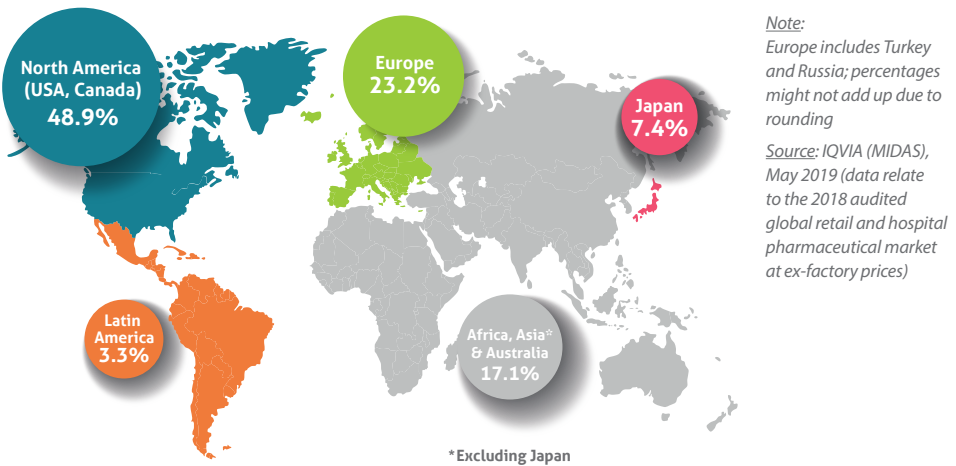
Note:
Data includes Iceland (since 2017), Greece & Lithuania (since 2013), Bulgaria and Turkey (since 2012), Poland (since 2010), Czech Republic, Estonia and Hungary (since 2009), Romania (since 2005) and Slovenia (since 2004)
Croatia, Cyprus, Latvia, Malta, Serbia, Slovakia: data not available

Source: EFPIA member associations – (e): EFPIA estimate

PHARMACEUTICAL SALES

The world pharmaceutical market was worth an estimated € 845,235 million (\$ 998,223 million) at ex-factory prices in 2018. The North American market (USA & Canada) remained the world's largest market with a 48.9% share, well ahead of Europe and Japan.

BREAKDOWN OF THE WORLD PHARMACEUTICAL MARKET – 2018 SALES



PRICE STRUCTURE

Distribution margins, which are generally fixed by governments, and VAT rates differ significantly from country to country in Europe. On average, approximately one third of the retail price of a medicine reverts to distributors (pharmacists and wholesalers) and the State.

BREAKDOWN OF THE RETAIL PRICE OF A MEDICINE, 2017 (%)



PHARMACEUTICAL MARKET VALUE (at ex-factory prices)

| EFPIA 2017 | € million | | € million |
|------------|-----------|-------------|-----------|
| Austria | 4,213 | Lithuania | 602 |
| Belgium | 5,067 | Malta | 77 |
| Bulgaria | 1,089 | Netherlands | 5,086 |
| Croatia | 764 | Norway | 2,273 |
| Cyprus | 189 | Poland | 6,352 |
| Czech Rep. | 2,578 | Portugal | 3,056 |
| Denmark | 2,584 | Romania | 2,522 |
| Estonia | 301 | Russia | 16,253 |
| Finland | 2,373 | Serbia | 652 |
| France | 28,419 | Slovakia | 1,287 |
| Germany | 32,525 | Slovenia | 613 |
| Greece | 5,141 | Spain | 16,028 |
| Hungary | 2,242 | Sweden | 3,990 |
| Iceland | 147 | Switzerland | 5,250 |
| Ireland | 2,013 | Turkey | 7,752 |
| Italy | 26,945 | U.K. | 20,289 |
| Latvia | 277 | | |
| TOTAL | | 208,949 | |

Note:

Medicinal products as defined by Directive 2001/83/EEC

Cyprus, Denmark, Finland, Iceland, Latvia, Lithuania, Norway, Russia, Slovenia, Sweden: pharmaceutical market value at pharmacy purchasing prices

Turkey: 2016 data; Malta: 2007 data

Belgium, France, Germany, Ireland, Italy, Malta, Norway, Spain, United Kingdom: estimate

Source:

EFPIA member associations (official figures) – Latvia, Norway, Slovakia: IQVIA

The figures above are for pharmaceutical sales, at ex-factory prices, through all distribution channels (pharmacies, hospitals, dispensing doctors, supermarkets, etc.), whether dispensed on prescription or at the patient's request.

Sales of veterinary medicines are excluded.



VAT RATES APPLICABLE TO MEDICINES

The table below shows the VAT rates applied to medicines in European countries as of 1 January 2019.

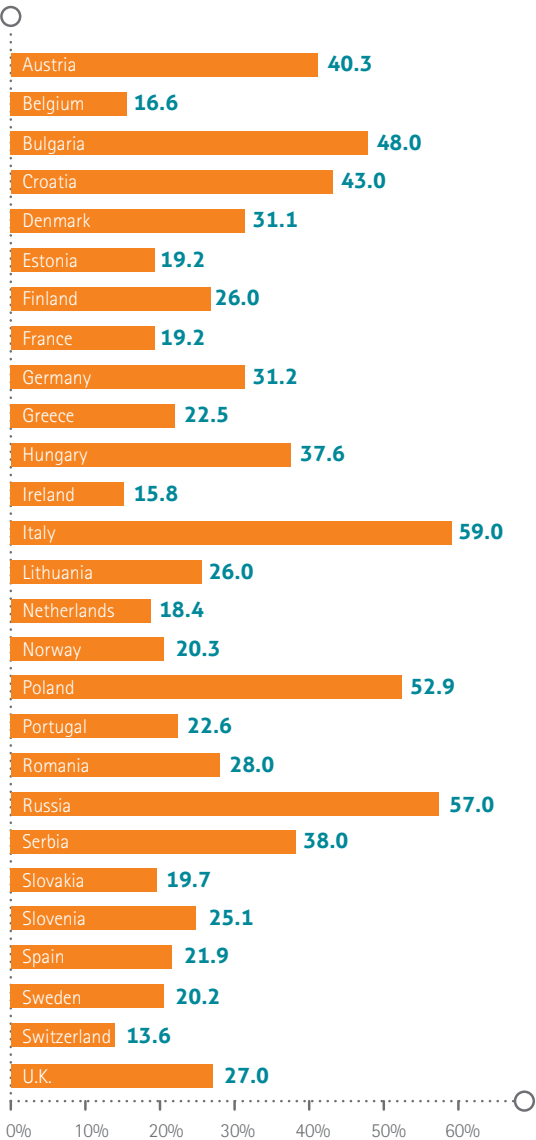
| Country | Standard VAT rate (%) | VAT rates applied to medicines | |
|----------------|-----------------------|--------------------------------|----------|
| | | Prescription (%) | OTC (%) |
| Austria | 20,0 | 10,0 | 10,0 |
| Belgium | 21,0 | 6,0 | 6,0 |
| Bulgaria | 20,0 | 20,0 | 20,0 |
| Croatia | 25,0 | 5,0 | 5,0 |
| Cyprus | 19,0 | 5,0 | 5,0 |
| Czech Republic | 21,0 | 10,0 | 10,0 |
| Denmark | 25,0 | 25,0 | 25,0 |
| Estonia | 20,0 | 9,0 | 9,0 |
| Finland | 24,0 | 10,0 | 10,0 |
| France (1) | 20,0 | 2,1 | 10,0 |
| Germany | 19,0 | 19,0 | 19,0 |
| Greece | 24,0 | 6,0 | 6,0–13,0 |
| Hungary | 27,0 | 5,0 | 5,0 |
| Iceland | 24,0 | 24,0 | 24,0 |
| Ireland (2) | 23,0 | 0–23,0 | 0–23,0 |
| Italy | 22,0 | 10,0 | 10,0 |
| Latvia | 21,0 | 12,0 | 12,0 |
| Lithuania (3) | 21,0 | 5,0 | 21,0 |
| Luxembourg | 17,0 | 3,0 | 3,0 |
| Malta | 18,0 | 0,0 | 0,0 |
| Netherlands | 21,0 | 9,0 | 9,0 |
| Norway | 25,0 | 25,0 | 25,0 |
| Poland | 23,0 | 8,0 | 8,0 |
| Portugal | 23,0 | 6,0 | 6,0 |
| Romania | 19,0 | 9,0 | 19,0 |
| Russia | 20,0 | 10,0 | 10,0 |
| Serbia | 20,0 | 10,0 | 10,0 |
| Slovakia | 20,0 | 10,0 | 20,0 |
| Slovenia | 22,0 | 9,5 | 9,5 |
| Spain | 21,0 | 4,0 | 4,0 |
| Sweden | 25,0 | 0,0 | 25,0 |
| Switzerland | 7,7 | 2,5 | 2,5 |
| Turkey | 18,0 | 8,0 | 8,0 |
| U.K. | 20,0 | 0,0 | 20,0 |

(1) France: reimbursable medicines 2.1%; non-reimbursable medicines 10.0% (2) Ireland: oral medication 0%; other medication 23%

(3) Lithuania: reimbursable medicines 5.0%; non-reimbursable medicines 21.0%

GENERICS

The term ‘generic’ is widely used but its definition is not always consistent between countries. Generics are usually produced by a manufacturer who is not the inventor of the original product, and are marketed when intellectual property protection rights are exhausted.



SHARE (ESTIMATE – IN %) ACCOUNTED FOR BY GENERICS IN PHARMACEUTICAL MARKET SALES VALUE (AT EX-FACTORY PRICES), 2017

Note:
Bulgaria, Croatia, Denmark, Estonia, Finland, Greece, Ireland, Hungary, U.K.: share of generics in pharmacy market sales
Austria, Belgium, France, Germany, Italy, Netherlands, Portugal, Slovenia, Spain: share of generics in reimbursable pharmacy market sales
Lithuania, Norway, Poland, Romania, Russia, Serbia, Slovakia, Sweden, Switzerland: share of generics in total market sales
Cyprus, Czech Republic, Iceland, Latvia, Malta, Turkey: 2017 data not available
France: data relate only to those active substances listed on the official list of medicines
Definition: ‘generic’ means a medicine based on an active substance that is out of patent and which is marketed under a different name from that of the original branded medicine.
Source: EFPIA member associations

PHARMACEUTICAL EXPORTS

| EFPIA 2017 | € million | | € million |
|----------------|-----------|----------------|----------------|
| Austria | 9,942 | Lithuania | 704 |
| Belgium | 40,294 | Luxembourg | 339 |
| Bulgaria | 893 | Malta | 265 |
| Croatia | 1,144 | Netherlands | 31,729 |
| Cyprus | 278 | Norway | 669 |
| Czech Republic | 2,291 | Poland | 4,016 |
| Denmark | 12,496 | Portugal | 1,081 |
| Estonia | 82 | Romania | 749 |
| Finland | 752 | Russia | 313 |
| France | 28,653 | Slovakia | 330 |
| Germany | 75,118 | Slovenia | 2,728 |
| Greece | 1,190 | Spain | 10,740 |
| Hungary | 5,015 | Sweden | 7,556 |
| Ireland | 35,451 | Switzerland | 66,374 |
| Italy | 23,855 | Turkey | 775 |
| Latvia | 438 | United Kingdom | 29,776 |
| TOTAL | | | 396,036 |

Note:

All data based on SITC 54

Source: Eurostat (COMEXT database – May 2019)

Norway, Turkey: OECD, Harmonised System Chapter 30; Switzerland: Swiss Federal Customs Administration



PHARMACEUTICAL IMPORTS

| EFPIA 2017 | € million | | € million |
|----------------|-----------|----------------|----------------|
| Austria | 8,976 | Lithuania | 1,013 |
| Belgium | 32,663 | Luxembourg | 486 |
| Bulgaria | 1,294 | Malta | 183 |
| Croatia | 1,048 | Netherlands | 23,520 |
| Cyprus | 245 | Norway | 2,061 |
| Czech Republic | 4,082 | Poland | 6,103 |
| Denmark | 3,829 | Portugal | 2,442 |
| Estonia | 359 | Romania | 2,962 |
| Finland | 1,918 | Russia | 8,015 |
| France | 24,694 | Slovakia | 1,709 |
| Germany | 47,672 | Slovenia | 1,259 |
| Greece | 3,092 | Spain | 13,190 |
| Hungary | 3,971 | Sweden | 3,850 |
| Ireland | 9,540 | Switzerland | 26,680 |
| Italy | 23,390 | Turkey | 3,938 |
| Latvia | 598 | United Kingdom | 29,850 |
| TOTAL | | | 294,632 |

Note:

All data based on SITC 54

Source: Eurostat (COMEXT database – May 2019)

Norway, Turkey: OECD, Harmonised System Chapter 30; Switzerland: Swiss Federal Customs Administration



PHARMACEUTICAL TRADE BALANCE

| EFPIA 2017 | € million | | € million |
|----------------|-----------|----------------|----------------|
| Austria | 966 | Lithuania | -309 |
| Belgium | 7,631 | Luxembourg | -147 |
| Bulgaria | -401 | Malta | 82 |
| Croatia | 96 | Netherlands | 8,209 |
| Cyprus | 33 | Norway | -1,392 |
| Czech Republic | -1,791 | Poland | -2,087 |
| Denmark | 8,667 | Portugal | -1,361 |
| Estonia | -277 | Romania | -2,213 |
| Finland | -1,166 | Russia | -7,702 |
| France | 3,959 | Slovakia | -1,379 |
| Germany | 27,446 | Slovenia | 1,469 |
| Greece | -1,902 | Spain | -2,450 |
| Hungary | 1,044 | Sweden | 3,706 |
| Ireland | 25,911 | Switzerland | 39,694 |
| Italy | 465 | Turkey | -3,163 |
| Latvia | -160 | United Kingdom | -74 |
| TOTAL | | | 101,404 |

Note:

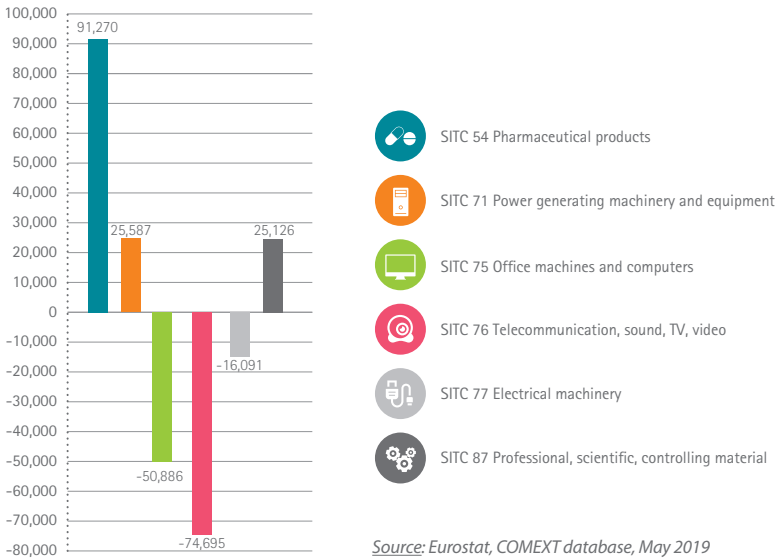
All data based on SITC 54

Source: Eurostat (COMEXT database – May 2019)

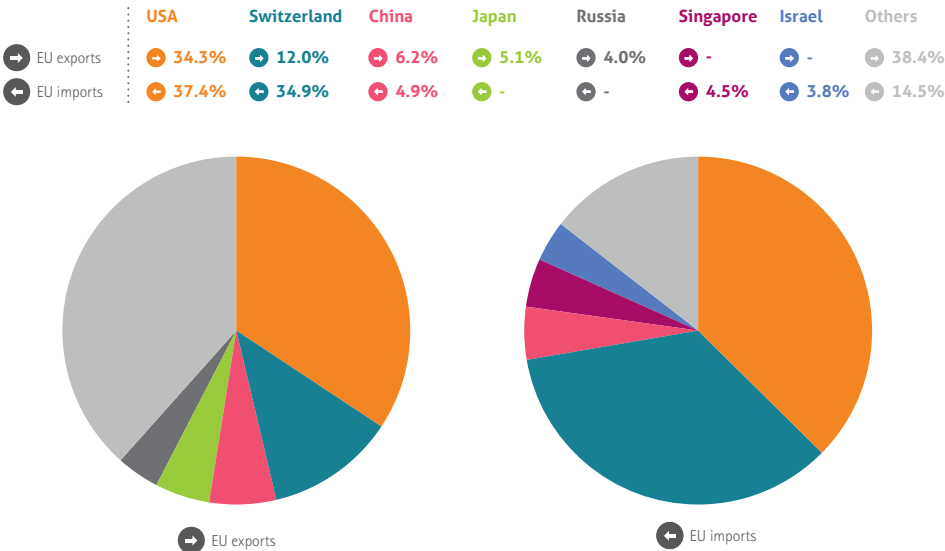
Norway, Turkey: OECD, Harmonised System Chapter 30; Switzerland: Swiss Federal Customs Administration



EU-28 TRADE BALANCE – HIGH TECHNOLOGY SECTORS (€ MILLION) – 2018



THE EUROPEAN UNION'S TOP 5 PHARMACEUTICAL TRADING PARTNERS – 2018



Source: Eurostat, COMEXT database, May 2019

TOTAL SPENDING (PUBLIC AND PRIVATE) ON HEALTHCARE AS A PERCENTAGE OF GDP AT MARKET PRICES

| Country | 1980 | 1990 | 2000 | 2010 | 2015 | 2017 |
|----------------|------|------|------|------|------|------|
| Austria | 7.0 | 7.7 | 9.2 | 10.2 | 10.3 | 10.3 |
| Belgium | 6.1 | 7.1 | 7.9 | 9.8 | 10.1 | 10.0 |
| Czech Republic | – | 3.7 | 5.7 | 6.9 | 7.1 | 7.1 |
| Denmark | 8.4 | 8.0 | 8.1 | 10.3 | 10.3 | 10.2 |
| Estonia | – | – | 5.2 | 6.3 | 6.5 | 6.7 |
| Finland | 5.9 | 7.2 | 6.8 | 8.9 | 9.7 | 9.2 |
| France | 6.7 | 8.0 | 9.5 | 11.2 | 11.5 | 11.5 |
| Germany | 8.1 | 8.0 | 9.8 | 11.0 | 11.1 | 11.3 |
| Greece | – | 6.1 | 7.2 | 9.6 | 8.2 | 8.4 |
| Hungary | – | – | 6.8 | 7.5 | 7.1 | 7.2 |
| Iceland | 6.0 | 7.6 | 9.0 | 8.8 | 8.3 | 8.5 |
| Ireland | 7.5 | 5.6 | 5.9 | 10.5 | 7.4 | 7.1 |
| Italy | – | 7.0 | 7.6 | 9.0 | 9.0 | 8.9 |
| Latvia | – | – | 5.4 | 6.1 | 5.7 | 6.3 |
| Luxembourg | 4.6 | 5.1 | 5.9 | 7.0 | 6.2 | 6.1 |
| Netherlands | 6.6 | 7.1 | 7.1 | 10.4 | 10.4 | 10.1 |
| Norway | 5.4 | 7.1 | 7.7 | 8.9 | 10.1 | 10.4 |
| Poland | – | 4.3 | 5.3 | 6.4 | 6.3 | 6.7 |
| Portugal | 4.8 | 5.5 | 8.4 | 9.8 | 9.0 | 9.0 |
| Slovakia | – | – | 5.3 | 7.8 | 6.9 | 7.1 |
| Slovenia | – | – | 7.8 | 8.6 | 8.5 | 8.0 |
| Spain | 5.0 | 6.1 | 6.8 | 9.0 | 9.1 | 8.8 |
| Sweden | 7.8 | 7.3 | 7.4 | 8.5 | 11.0 | 10.9 |
| Switzerland | 6.6 | 7.9 | 9.8 | 10.7 | 11.9 | 12.3 |
| Turkey | 2.4 | 2.5 | 4.6 | 5.1 | 4.1 | 4.2 |
| United Kingdom | 5.1 | 5.1 | 6.0 | 8.5 | 9.8 | 9.6 |
| Europe | 6.1 | 6.4 | 7.1 | 8.7 | 8.6 | 8.6 |
| USA | 8.2 | 11.3 | 12.5 | 16.4 | 16.8 | 17.2 |
| Japan | 6.2 | 5.8 | 7.2 | 9.2 | 10.9 | 10.7 |

Note: Europe: non-weighted average (27 countries) – EFPIA calculations

Source: OECD Health Statistics 2018, May 2019

PAYMENT FOR PHARMACEUTICALS BY COMPULSORY HEALTH INSURANCE SYSTEMS AND NATIONAL HEALTH SERVICES (ambulatory care only)

| EFPIA 2017 | € million | | € million |
|--------------|-----------|-------------|----------------|
| Austria | 2,821 | Lithuania | 226 |
| Belgium | 4,180 | Malta | n.a. |
| Bulgaria | 408 | Netherlands | 2,924 |
| Croatia | 382 | Norway | 1,269 |
| Cyprus | 93 | Poland | 1,941 |
| Czech Rep. | 1,246 | Portugal | 1,213 |
| Denmark | 758 | Romania | 1,446 |
| Estonia | 132 | Russia | 1,734 |
| Finland | 1,387 | Serbia | 243 |
| France | 23,704 | Slovakia | 1,172 |
| Germany | 37,703 | Slovenia | 307 |
| Greece | 1,945 | Spain | 10,171 |
| Hungary | 1,094 | Sweden | 2,252 |
| Iceland | 69 | Switzerland | 5,197 |
| Ireland | 1,579 | Turkey | 6,368 |
| Italy | 8,116 | U.K. | 11,548 |
| Latvia | 147 | | |
| TOTAL | | | 133,775 |

Note:

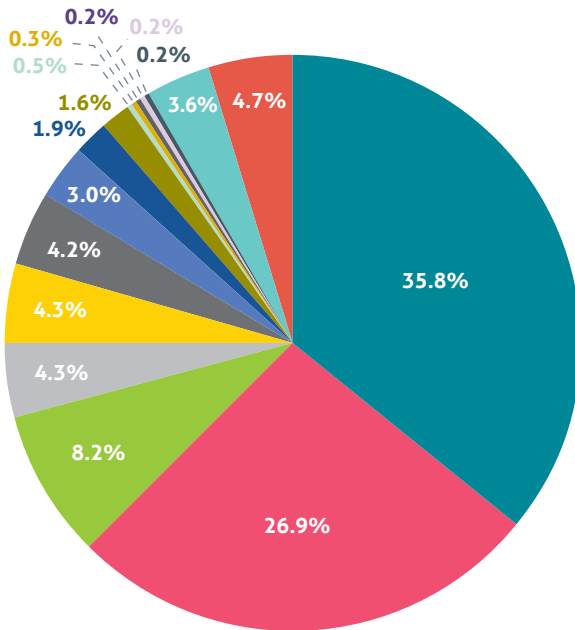
Croatia, Turkey: 2016 data; Cyprus: 2015 data

France, Ireland, Netherlands, Norway, Sweden, U.K.: estimate

Source: EFPIA member associations (official figures)



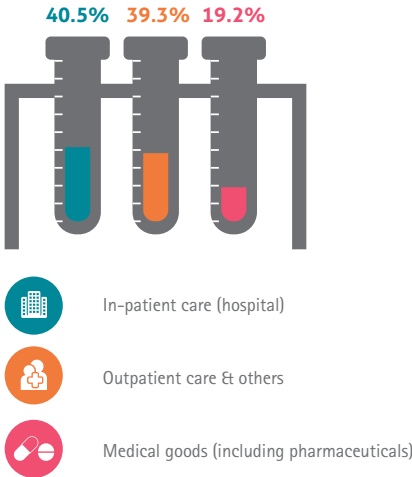
CAUSES OF DEATH BY MAJOR DISEASE AREAS IN EUROPE (EU-28)



- Diseases of the circulatory system
- Neoplasms
- Diseases of the respiratory system
- Diseases of the digestive system
- Mental and behavioural disorders
- Diseases of the nervous system and the sense organs
- Endocrine, nutritional and metabolic diseases
- Diseases of the genitourinary system
- Certain infectious and parasitic diseases
- Diseases of the musculoskeletal system and connective tissues
- Diseases of the blood and blood-forming organs and certain disorders involving the immune mechanism
- Diseases of the skin and subcutaneous tissue
- Certain conditions originating in the perinatal period
- Congenital malformations, deformations and chromosomal abnormalities
- Symptoms, signs and abnormal clinical and laboratory findings, not elsewhere classified
- External cause of morbidity and mortality

Data Source: Eurostat, data relate to year 2016 (non-disease directly related causes of deaths: EFPIA calculations), May 2019

BREAKDOWN OF TOTAL HEALTH EXPENDITURE IN EUROPE – 2016



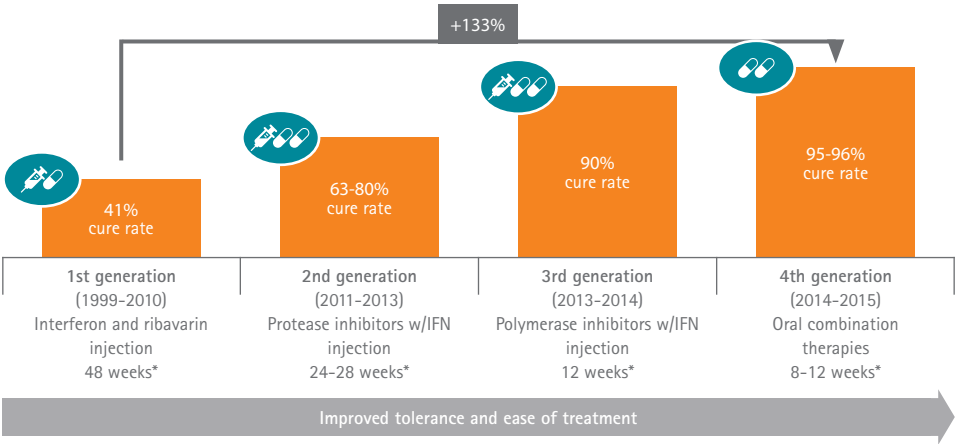
THE ADDED VALUE OF MEDICINES IN HEALTHCARE

Medicines constitute a small part of healthcare costs with, on average, 19.2% of total health expenditure in Europe being spent on pharmaceuticals and other medical goods. In costly diseases such as cancer and rheumatoid arthritis, medicines account for even less than 10% of the total disease costs. Medicines can also generate additional savings, for example by substantially reducing costs in other areas of healthcare, including hospital stays and long-term care costs.

Source: OECD Health Statistics 2018, May 2019 – EFPIA calculations (non-weighted average for 25 EU & EFTA countries)

CHRONOLOGY OF HEPATITIS C TREATMENT (1999–2015)

* Hepatitis C is the leading cause of liver transplants and the reason liver cancer is on the rise



* Treatment duration, INF=interferon;
Source: PhRMA, 'Prescription Medicines: International Costs in Context' (2017)

EFPIA MEMBER ASSOCIATIONS

Austria

Fachverband der Chemischen Industrie Österreichs (FCIO)

Belgium

Association Générale de l'Industrie du Médicament (pharma.be)

Denmark

Laegemiddelindustriforeningen

The Danish Association of the Pharmaceutical Industry (Lif)

Finland

Lääketeollisuus ry

Pharma Industry Finland (PIF)

France

Les Entreprises du Médicament (LEEM)

Germany

Verband Forschender Arzneimittelhersteller (VfA)

Greece

Hellenic Association of Pharmaceutical Companies (SFEE)

Ireland

Irish Pharmaceutical Healthcare Association (IPHA)

Italy

Associazione delle Imprese del Farmaco (Farmindustria)

Netherlands

Vereniging Innovatieve Geneesmiddelen

Norway

Legemiddelindustrien

Norwegian Association of Pharmaceutical Manufacturers (LMI)

Poland

Employers Union of Innovative Pharmaceutical Companies (Infarma)

Portugal

Associação Portuguesa da Indústria Farmacêutica (Apifarma)

Russia

Association of International Pharmaceutical Manufacturers (AIPM)

Spain

Asociación Nacional Empresarial de la Industria Farmacéutica (Farmaindustria)

Sweden

Läkemedelsindustriföreningen

The Swedish Association of the Pharmaceutical Industry (LIF)

Switzerland

Verband der forschender pharmazeutischen Firmen der Schweiz (Interpharma)

Turkey

Araştırmacı İlaç Firmaları Derneği (AİFD)

United Kingdom

The Association of the British Pharmaceutical Industry (ABPI)

ASSOCIATIONS WITH LIAISON STATUS

Bosnia-Herzegovina: Association of Research-based Medicine Producers (UIPL)

Bulgaria: Association of Research-based Pharmaceutical Manufacturers in Bulgaria (ARPharM)

Croatia: Innovative Pharmaceutical Initiative (iFI)

Cyprus: Cyprus Association of Pharmaceutical Companies (KEFEA)

Czech Republic: Association of Innovative Pharmaceutical Industry (AIFP)

Estonia: Association of Pharmaceutical Manufacturers in Estonia (APME)

Hungary: Association of Innovative Pharmaceutical Manufacturers (AIPM)

Iceland: Icelandic Association of the Pharmaceutical Industry (FRUMTÖK)

Latvia: Association of International Research-based Pharmaceutical Manufacturers (SIFFA)

Lithuania: The Innovative Pharmaceutical Industry Association (IFPA)

Malta: Maltese Pharmaceutical Association (PRIMA)

North Macedonia: Association of Foreign Innovative Pharmaceutical Manufacturers (HOBA)

Romania: Association of International Medicines Manufacturers (ARPIM)

Serbia: Innovative Drug Manufacturers' Association (INOVA)

Slovakia: Slovak Association of Innovative Pharmaceutical Industry (AIFP)

Slovenia: Forum of International Research and Development Pharmaceutical Industries (EIG)

Ukraine: Association of Pharmaceutical Research and Development (APRaD)

MEMBER COMPANIES

✱ Full Members

| | |
|----------------------|---------------------------|
| AbbVie | Menarini |
| Almirall | Merck |
| Amgen | Merck Sharp & Dohme (MSD) |
| Astellas | Novartis |
| AstraZeneca | Novo Nordisk |
| Bayer | Pfizer |
| Biogen | Pierre Fabre |
| Boehringer Ingelheim | Roche |
| Bristol-Myers Squibb | Sanofi |
| Celgene | Servier |
| Chiesi | Shire |
| GlaxoSmithKline | Takeda |
| Grünenthal | Teva |
| Ipsen | UCB |
| Johnson & Johnson | |
| LEO Pharma | |
| Lilly | |

✱ Affiliate Members

| |
|----------------|
| Bial |
| Daiichi-Sankyo |
| Eisai |
| Esteve |
| Lundbeck |
| Otsuka |
| Rovi |
| Vifor Pharma |





European Federation of Pharmaceutical
Industries and Associations

EFPIA (The European Federation of Pharmaceutical Industries and Associations) represents the research-based pharmaceutical industry operating in Europe.

Founded in 1978, its members comprise **36** national pharmaceutical industry associations and **39** leading pharmaceutical companies undertaking research, development and manufacturing of medicinal products in Europe for human use.

EFPIA aims to create an environment that enables its members to innovate, discover, develop and deliver new therapies and vaccines for people across Europe, as well as contribute to the European economy. EFPIA's vision is for a healthier future for Europe. A future based on prevention, innovation, access to new treatments and better outcomes for patients.

Through its membership, EFPIA represents the common views of more than 1,900 large, medium and small companies including the entire European research-based pharmaceutical sector whose interests also include a significant part of the generics and biosimilars segments. Two specialised groups have been created within EFPIA to address specific issues relating to vaccines (Vaccines Europe) and the needs of biopharmaceutical companies (EBE - European Biopharmaceutical Enterprises).

Further details about the Federation and its activities can be obtained from:



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