

THE PHARMACEUTICAL
MARKET IN GREECE

FACTS & FIGURES 2019



FOUNDATION
FOR ECONOMIC
& INDUSTRIAL
RESEARCH

ΣfEE
HELLENIC ASSOCIATION
OF PHARMACEUTICAL COMPANIES

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EXECUTIVE SUMMARY

The coronavirus pandemic (COVID-19) caused significant challenges in many countries around the world. In addition to the loss of human life, the significant number of patients and the big pressure on health systems, in some countries, there is also an economic crisis due to the interruption or reduction of economic activity in many sectors. The partial or general lockdown is expected to sink the economies for 2020, including the Greek economy. The estimation of the rate of change of GDP vary depending on the organization and parameters. Based on preliminary data, the European Commission estimates that Greek GDP will shrink by 9.7% in 2020, with a partial recovery in 2021 by 7.9%. Respectively, the IMF recorded a bleak forecast at -10.0%, while depending on the various parameters, IOBE and the Bank of Greece forecast that GDP will fall from -4% to -9%. In any case, it is universally accepted that the coronavirus crisis will cause a significant economic decline in the Greek economy, but also in other developed and industrialized countries. At the same time, European health systems must reassess public health expenditure.

Gross Domestic Product (GDP) of the Greek economy increased by 1.9% in 2019, like 2018, amounted at €186,5 bil. Public consumption increased significantly in 2019, compared to 2018, but an increase that was offset by the decrease of exports, with the result that GDP as a whole increased at the same rate. Private consumption increased at a slightly lower rate than in 2018, while investment also declined, mainly due to stocks. The demographic issue remains crucial for the country. These **demographic trends** also directly affect the population's dependency ratio. In Greece nearly half of the population is dependent on the other half, and its proportion is expected to growth, signaling increased pressure on the social security system. In 2020, Greece's dependency ratio reaches 56%, meaning that **for every 2 active people there is 1 inactive**, close to EU28 average (55%) and the average of Southern countries (55%). Over time, there has been a strong rise in the number of deaths in Greece due to circulatory system diseases in 2017 accounted for 37.7% of total deaths, while the number of deaths due to neoplasms estimated at 24.6% of total deaths.

Total health expenditure decreased by -34.2% during the period 2010-2018 (- 0.1% in Southern countries, +15.2% in the EU), amounted at €14.3 bil. in 2018 (7.7% of GDP). **Public health expenditure** decreased by -42.1% (-5.8% in Southern countries, + 15.0% in the EU) over the same period, amounted at €8.4 bil. in 2018 (4.5 % of GDP). The decline in public health expenditure has resulted in a shift in health spending to the private sector, with **private health expenditure** reaching 40% in 2018 (28% in Southern countries, 19% in the EU).

However, the needs of the population for health care are affected, amongst others, by demographic trends: **life expectancy in Greece is high** (81.4 years higher than EU average 80.9 years in 2017),

steady **reduction of the population** (births - deaths) by -34,000 people (2018), and **increased ageing population** (over 65) from 21.9% of the total population in 2019 rising to 33.0% in 2060.

From the above, the **growing demand for health care**, thus for public funding on health care services and pharmaceuticals is documented, with further increase in the private expenditure considered unsustainable in an environment of long-term unemployment and significant decline of national income.

With regards to the pharmaceutical expenditure, **total outpatient pharmaceutical expenditure** in Greece estimated at €3.9 bil. in 2019, (€1,945 bil. is public pharmaceutical expenditure). While total out-of-hospital public pharmaceutical expenditure remains relatively stable over the period 2012-2019, **public outpatient pharmaceutical expenditure decreased by -62%** over the period 2009-2019. At the same time the weight shifted towards private sector, with **industry's contribution**, through flat mandatory returns and discounts (rebate and clawback). As far as **public hospital pharmaceutical expenditure** is concerned during the period 2012-2015 amounted to €760 mil. From 2016 onwards, with the introduction of closed budget, it was significantly reduced by -29%, resulting in the contribution of pharmaceutical industry with €501 mil. in 2019.

The significant reduction in the public sector's contribution to pharmaceutical spending has resulted in a shift to the private sector where for 2019 **patient participation** in outpatient pharmaceutical expenditure reaches around €636 mil. and **industry** in €1.3 bil., while in hospital pharmaceutical expenditure the participation of the industry reaches to € 501 mil. As a result, the industry for 2019 with rebate and clawback mechanisms has reached the needs of Greek patients for pharmaceutical coverage with 1 out of 3 medicines (34%) in out-patient and 1 in 2 medicines (45 %) at hospital level.

Despite the significant impact of fiscal adjustment on public funding, **the pharmaceutical industry remains a pillar for investment** in Greece with Research and Development (R&D) expenditure close to 5% of total R&D expenditure in Greece (2017) and 2,811 clinical studies independent of phase and stage conducted until 2019 (1,604 completed). Production of pharmaceutical products in Greece was estimated at €996 mil., with Gross Value Added (ex-factory) at €559 mil. (3.0% of the manufacturing). Employment in the manufacturing of pharmaceutical products in Greece was estimated at 21.2 thousand people in 2019, with 60.6% of them with university education, compared to 36.6% of the total economy and 22.8% of the total manufacturing.

Lastly, imports and exports of pharmaceutical products amounted to €2.4 bil. and €1.9 bil., respectively in 2019 and accounted for 5.6% of total Greek exports in 2019.

The report “The Pharmaceutical Market in Greece: Facts & Figures 2019” was produced by Health Economics Observatory research staff of IOBE with the cooperation of SfEE’s Data Monitoring Committee.

Research staff of IOBE

- Aggelos Tsakanikas -

Assistant Professor at the National Technical University
of Athens and Scientific Associate of IOBE

- Athanasios Athanasiadis -

Research Officer of Health Economics Observatory, IOBE

- Grigoris Pavlou -

Research Associate, IOBE

Data Monitoring Committee of SfEE

- Christos Martakos -

Market Access Director, Pharmaserve- Lilly

- Kostis Mastorakis -

Business Excellence Manager, Roche

- Kallia Mortaki -

Market Access Officer, SfEE

- Jenny Papadonikolaki -

Public Affairs Manager, SfEE

“THE PHARMACEUTICAL MARKET IN GREECE: FACTS & FIGURES 2019”

It is with great pleasure to preface the renewed annual edition ‘**The Pharmaceutical Market in Greece: Facts & Figures 2019**’, produced by research staff of IOBE in collaboration with SfEE’s Data Monitoring Committee.

This report intends to provide the most comprehensive overview of key facts and data of the pharmaceutical market in Greece, to inform both our members and other stakeholders in the broader health sector.

More specifically, this year’s edition covers the most important social and economic changes from the long recessionary period in our country, and records the impact of fiscal adjustment on health and specifically on pharmaceutical sector, through comparison with other European Union countries, and with countries implemented similar economic adjustment programs.

This edition attempted to include all data available until the end of 2019, to present an updated profile of the pharmaceutical market and the main changes that occurred.

The country after the completion of the Fiscal Adjustment programs, entered into a new era in which strategic planning and vision to shape a national health strategy are required, in this context, this report aims to demonstrate the added value of pharmaceutical sector for the Greek economy

We would like to thank the IOBE research staff and the members of SfEE Data Monitoring Committee

Pascal Apostolides



President of the Data Monitoring Committee

Olympios Papadimitriou

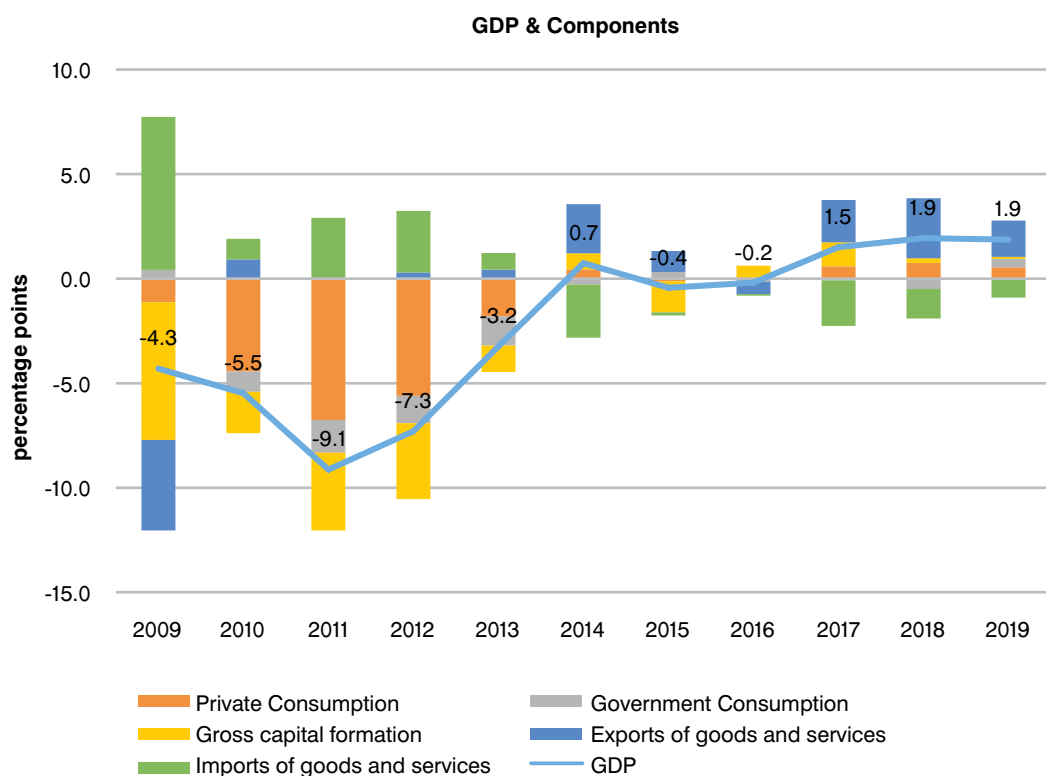


President of SfEE

1.1 MACROECONOMIC INDICATORS

Gross Domestic Product (GDP) of the Greek economy increased in 2019 by 1.9%, like 2018 and amounted to €186,5 bil. Public consumption grew sharply in 2019, in contrast to 2018, but on the other hand exports diminished, resulting to same GDP growth for 2019. The growth of the private consumption slowed down in 2019, compared to 2018. The rise of investments also weakened, due to inventories contraction.

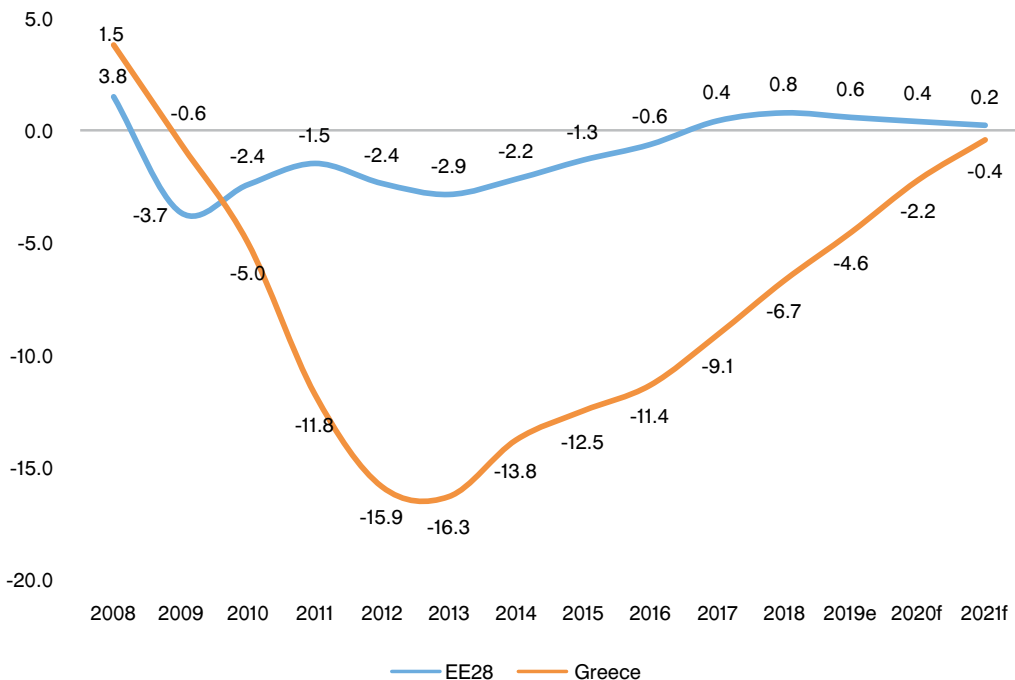
Figure 1: GDP components (€) and annual change (%) - Greece



SOURCE: Eurostat, 2020, data processing IOBE

The GDP of the Greek economy had a cumulative loss of -26.4% in the period 2007-2016, producing below the potential level. The discrepancy between current output generated and potential output (expressed as a percentage of potential) approached 16.3% in 2013, ie the economy produced 16.3% lower compared to its potential, compared to a discrepancy of 2.6%. EU28. The production gap is gradually normalizing, approaching 4.6%, but the relative improvement may be due to the contraction and devaluation of production rates.

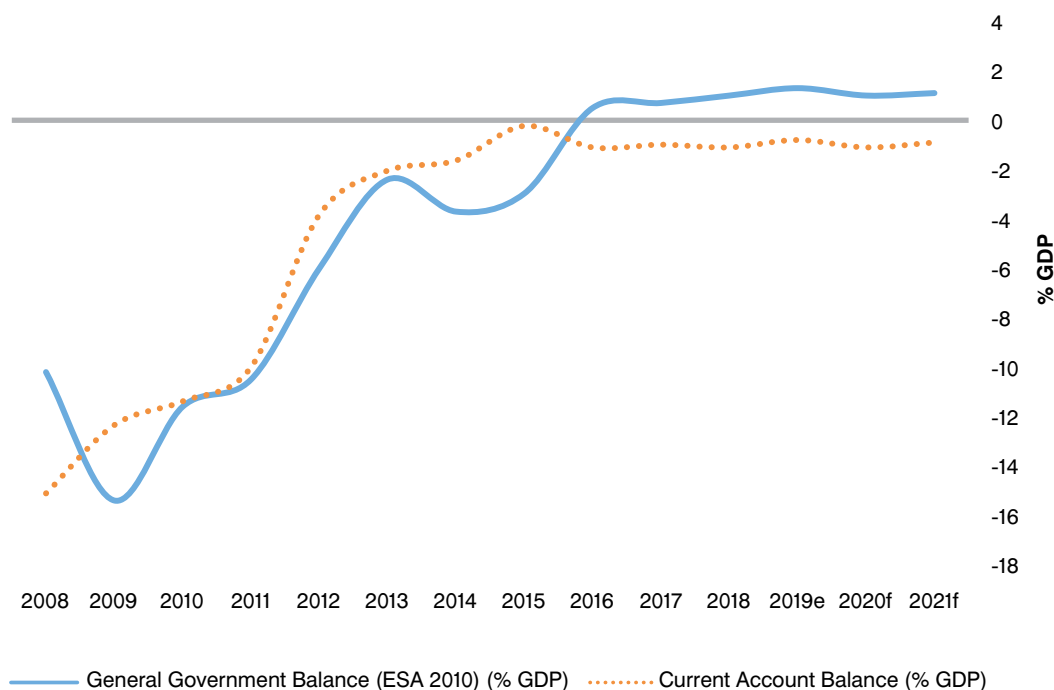
Figure 2: Gap between actual and potential gross domestic product (Percentage of potential GDP)



SOURCE: AMECO 2019, European Commission, e-estimation, f-forecast

The significant twin deficits recorded by the Greek economy in the past, i.e. deficit at the domestic (General Government Balance) and in the external sector (Current Account Balance), seem to be balancing in the medium term. The General Government Balance is expected to be marginally positive until 2021, a necessary condition for the sustainable development of the Greek economy, while the Current Account Balance is estimated to be slightly negative.

Figure 3: General Government Balance & Current Account Balance (% GDP)

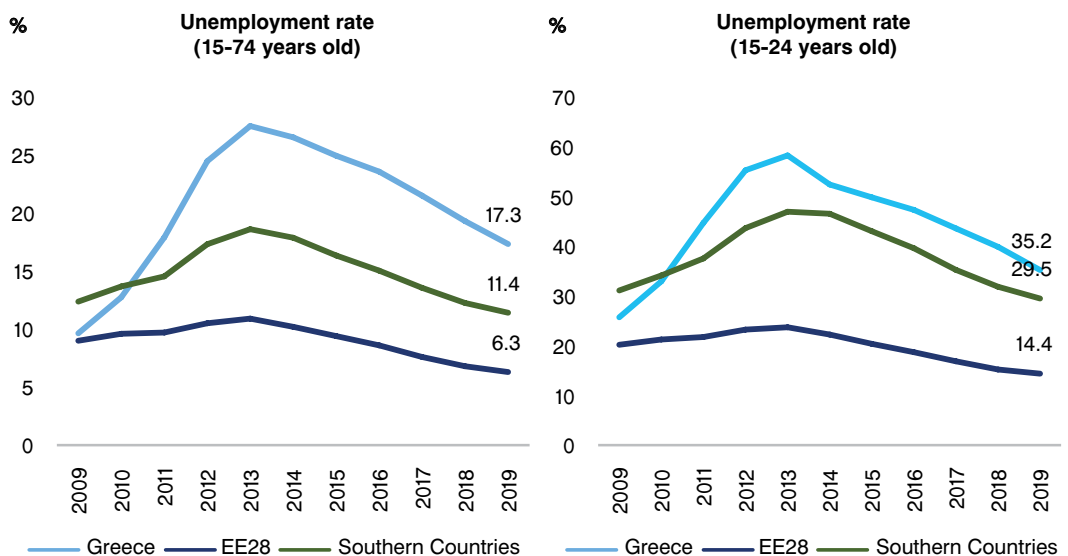


SOURCE: ELSTAT, 2019 AMECO, 2019, European Commission Autumn 2019 Economic Forecast (November 2019), data processing IOBE. The government budget deficit also includes interest on debt repayment but does not include extraordinary entries in revenues and expenses due to the recapitalization of banks in 2012-2015. The external sector balance is reported in the current account balance and includes the balances of goods and Services, Primary Income (Labour, Entrepreneurship) and Secondary Income (Current Transfers). general government Balance does not include the impact of the support to the financial institutions from all interventions during the financial crisis on the general government deficit.

1.2 SOCIAL ENVIRONMENT

In Greece, the unemployment rate of the general population climbed to a historically high level of 27.0% in 2013, with further de-escalation, in 2019 amounted to 17.3%, compared to 11.4% in Southern countries and 6.3% in EU28, three times lower percentage compared to Greece. Unemployment among young people aged 15-24, remains remarkably high in Greece, at 35.2% in 2018, compared with 29.5% in the Southern countries and 14.4% in the EU 28.

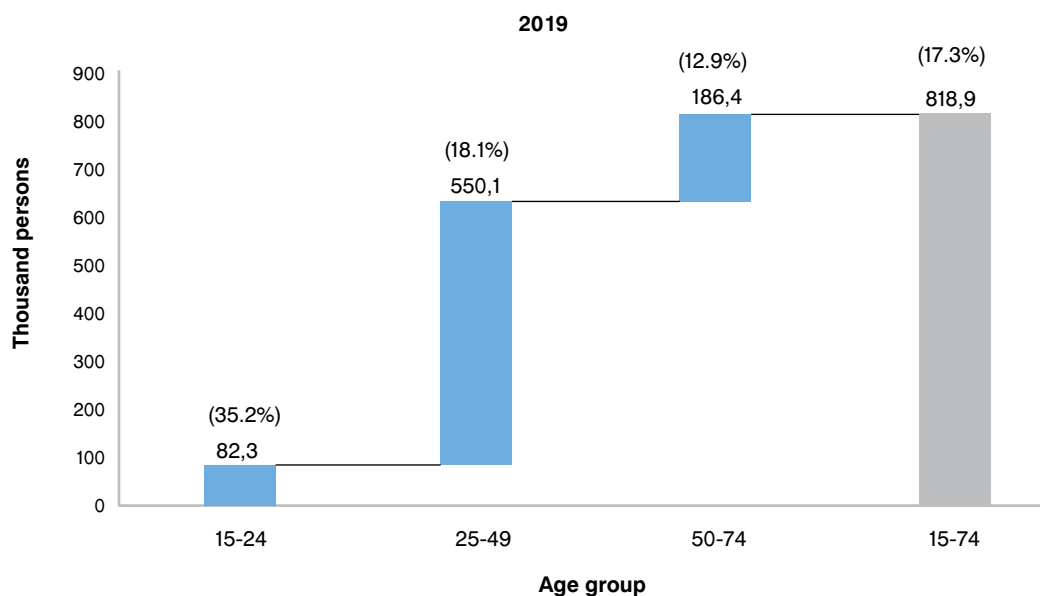
Figure 4: Unemployment rate (% of total population) Greece-EU28-Southern countries



SOURCE: Eurostat, 2020, data processing IOBE. Southern countries (Italy, Spain, Portugal)

At the same time, in 2019 a high rate of long-term unemployment is recorded at 70.1% of the total unemployed, that is 574.3 thousand people remain out of the labour market for more than 12 months. The highest unemployment rate is found among young people aged 15-24, while in absolute numbers the largest number of unemployed comes from ages 25-49, the most productive age group, with about 550.1 thousand people unemployed.

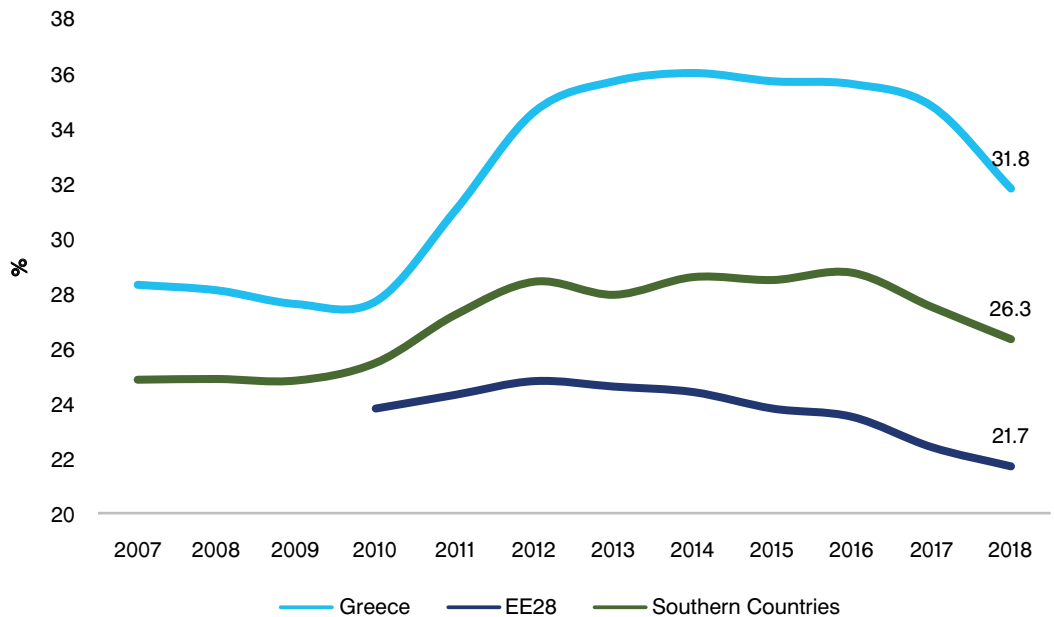
Figure 5: Number of unemployed (thousand persons) by age group - Greece (2019)



SOURCE: Eurostat, 2020 (percentages refer to the active population of this age group who are unemployed), data processing IOBE

In Greece, the proportion of the population at risk of poverty has declined significantly from 2014 reached 31.8% in 2018, compared to 26.3% in the Southern countries and 21.7% in the EU28. According to the General Confederation of Greek Workers (GSEE), the de-escalation of the poverty risk is linked both to the weakening of internal devaluation measures and to the introduction of a number of social benefits, such as the Minimum Guaranteed Income (2014), the Social Solidarity Income (2016), and other benefits.

Figure 6: Poverty risk (% of total population) Greece-EU28-Southern countries

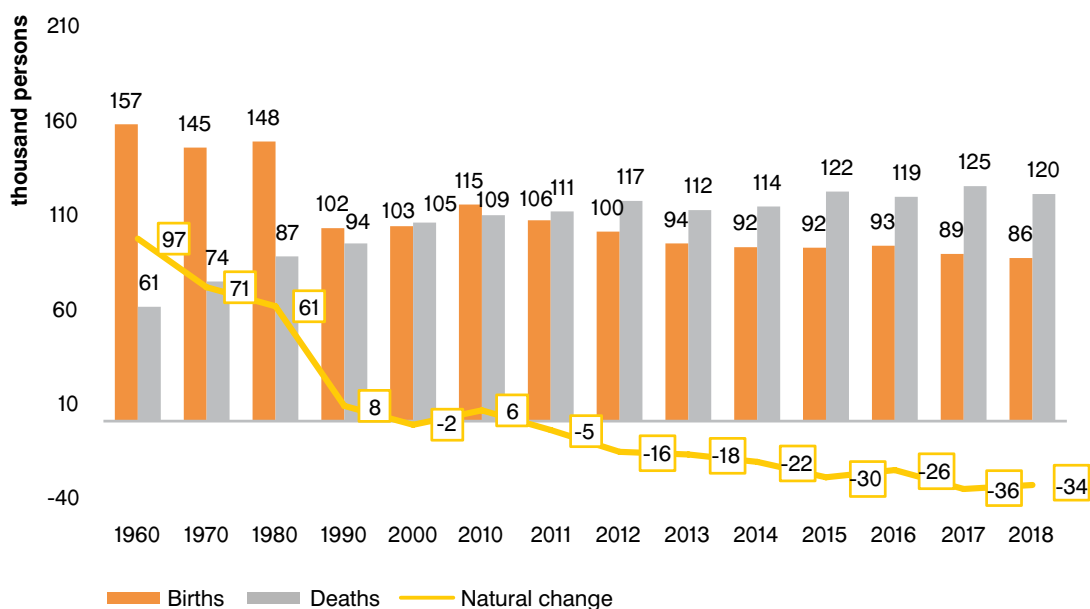


SOURCE: Eurostat, 2019, data processing IOBE. Percentage of people at poverty risk: percentage of people with disposable income below 60% of the national median income. Median income is the income above which is the 50% of the population. Southern countries (Italy, Spain, Portugal)

2.1 NATURAL POPULATION CHANGE

The number of births in Greece amounted to 86 thousand people in 2018 recording a 2.4% decrease from previous year, while the number of deaths recorded a decrease of 3.4%, amounting to 120 thousand people. As such, the natural population change (difference births - deaths) was negatively affected in 2018, resulting in an overall reduction of -34 thousand people in the national population.

Figure 7: Natural change of population (thousand persons)-Greece

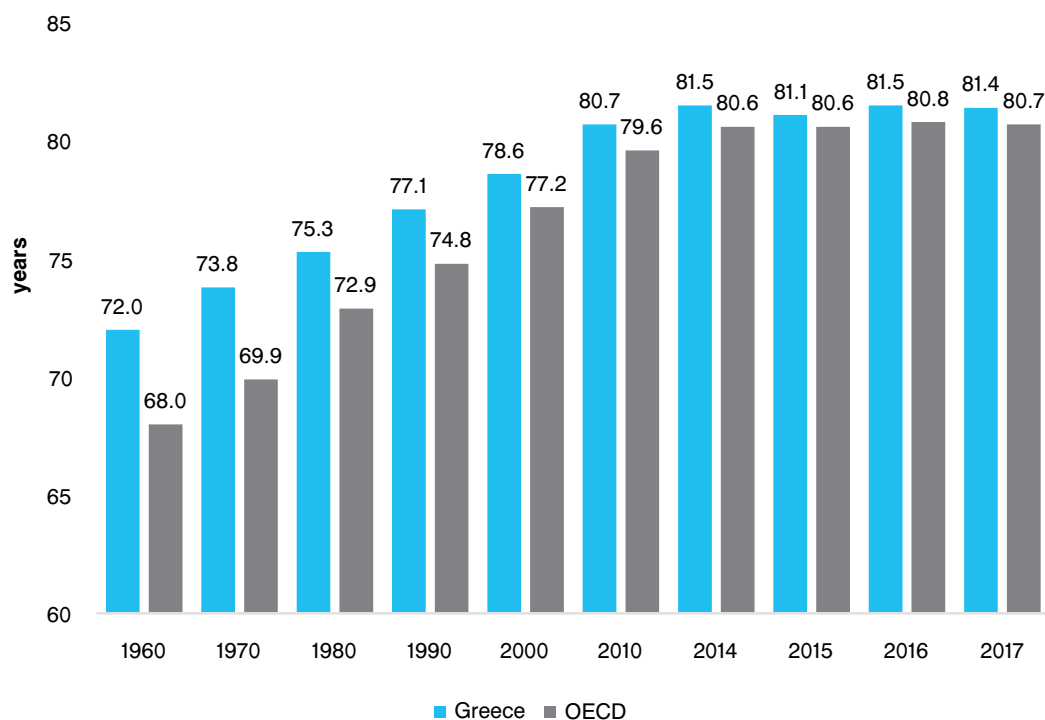


SOURCE: ELSTAT., 2019 *Natural change is defined as the change due only to the difference in births - deaths without taking into account immigration ** The number of births does not include stillbirths, which in 2018 amounted to 335

2.2 LIFE EXPECTANCY

The technological advances, improvement in the provision of healthcare services, contribution of R&D and introduction of innovative new drugs and therapies partially are some of the most important factors explaining the increase of life expectancy. Life expectancy in Greece has increased considerably by 9.4 years during 1960-2017 and it is higher than the average of OECD countries in the same period.

Figure 8: Evolution of life expectancy at birth (years) in Greece-OECD

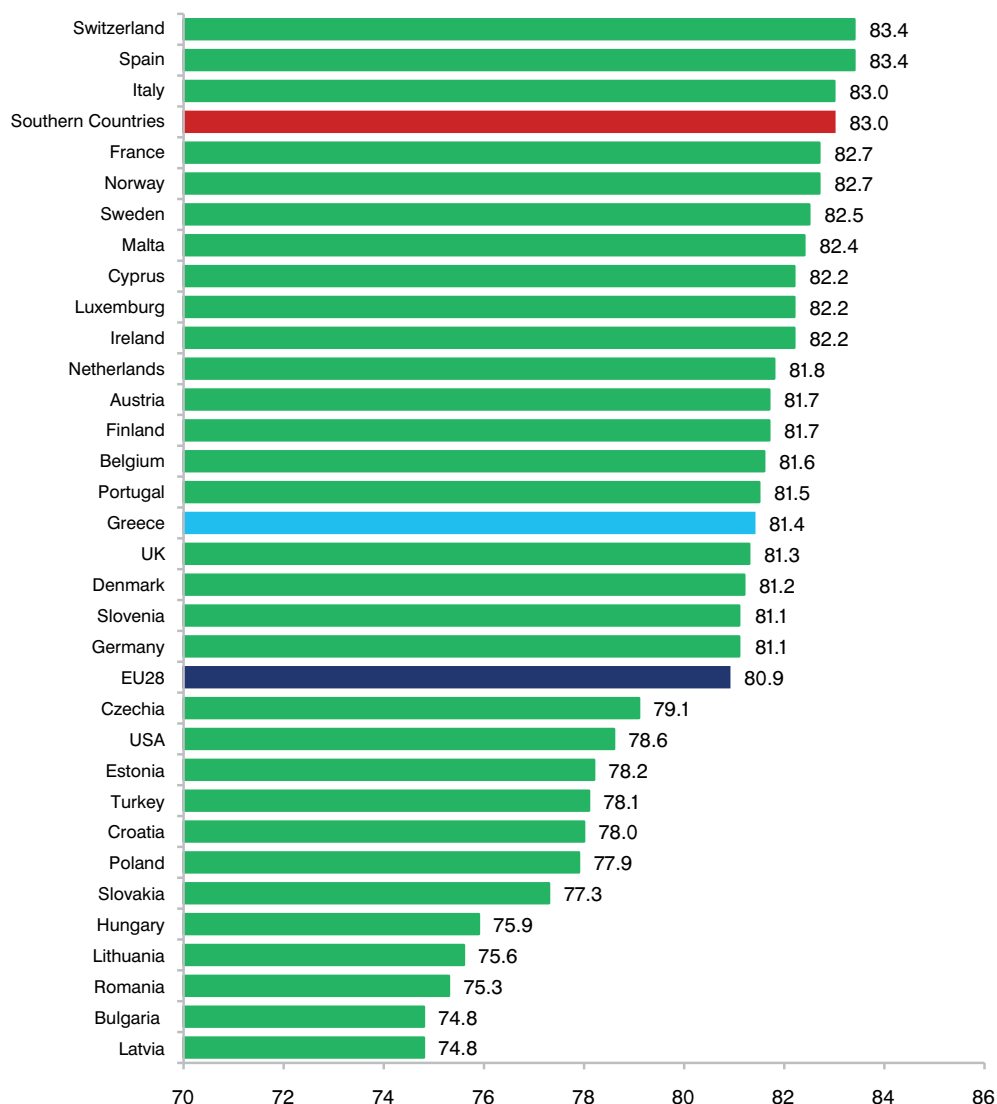


SOURCE: OECD, Health Statistics 2019

2.3 AGEING POPULATION

Life expectancy in Greece reached 81.4 years in 2017, which is higher from EU28 average (80.9 years) and lower than in Southern countries (83.0 years). The highest life expectancy was recorded in Switzerland, Spain, and Italy.

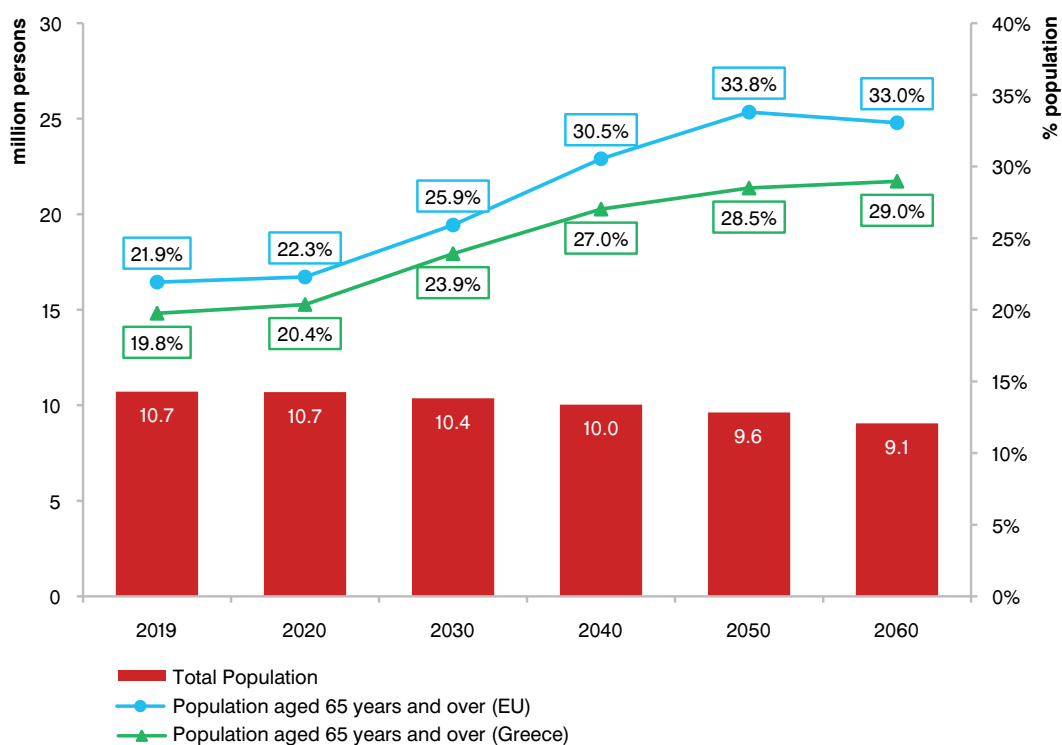
Figure 9: Life expectancy at birth (years) Greece-EU22-Southern countries (2017)



SOURCE: OECD, Statistics 2019, Eurostat 2019, data processing IOBE *Southern countries (Italy, Spain, Portugal)

Based on the latest revision from Eurostat, the steady decline of the population is expected to continue until 2060 (-15.5% in comparison with current levels). The percentage of people aged 65 and above in Greece is expected to increase from 21.9% of the total population in 2019 (19.8% in EU28) to reach 33.0% in 2060.

Figure 10: Population aged 65 and above (% total population) Greece-EU28

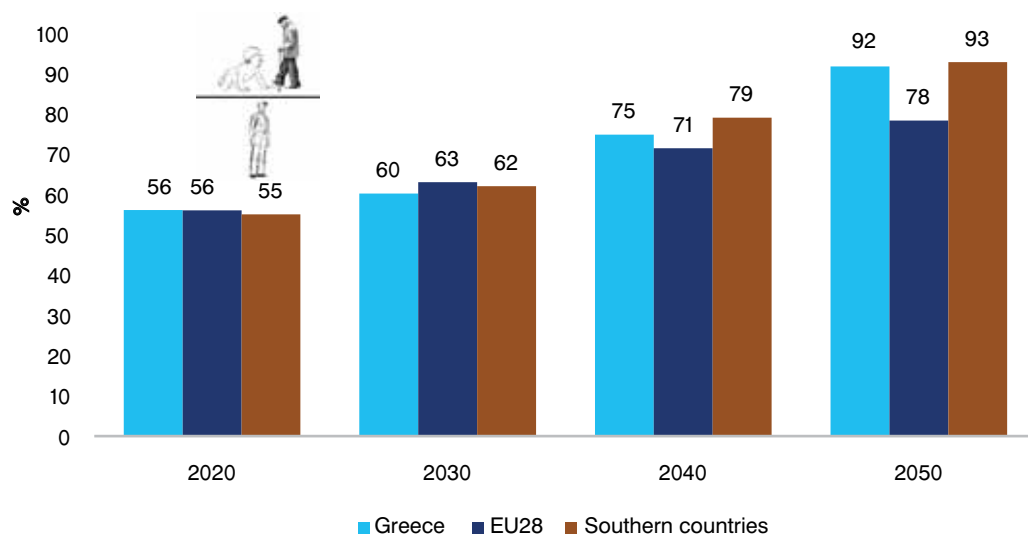


SOURCE: Eurostat, Population Projections, 2019, data processing IOBE *Not included the possible legalization of migration from 2015 onwards

2.4 DEPENDENCY RATIO

The demographic changes directly affect population's dependency ratio. In Greece, nearly half of the population is dependent on the other half, and this proportion is expected to grow, signaling deterioration and increased pressure on the social security system, following the general trend of the developed countries. In 2020, Greece's dependency ratio reaches 56%, meaning that for every 2 active people there is 1 inactive, like EU28 average (56%) and close to the average of Southern countries (55%). According to the United Nations, the dependency ratio in Greece is estimated to reach 92% by 2050.

Figure 11: Dependency ratio (%) Greece-EU28-Southern countries

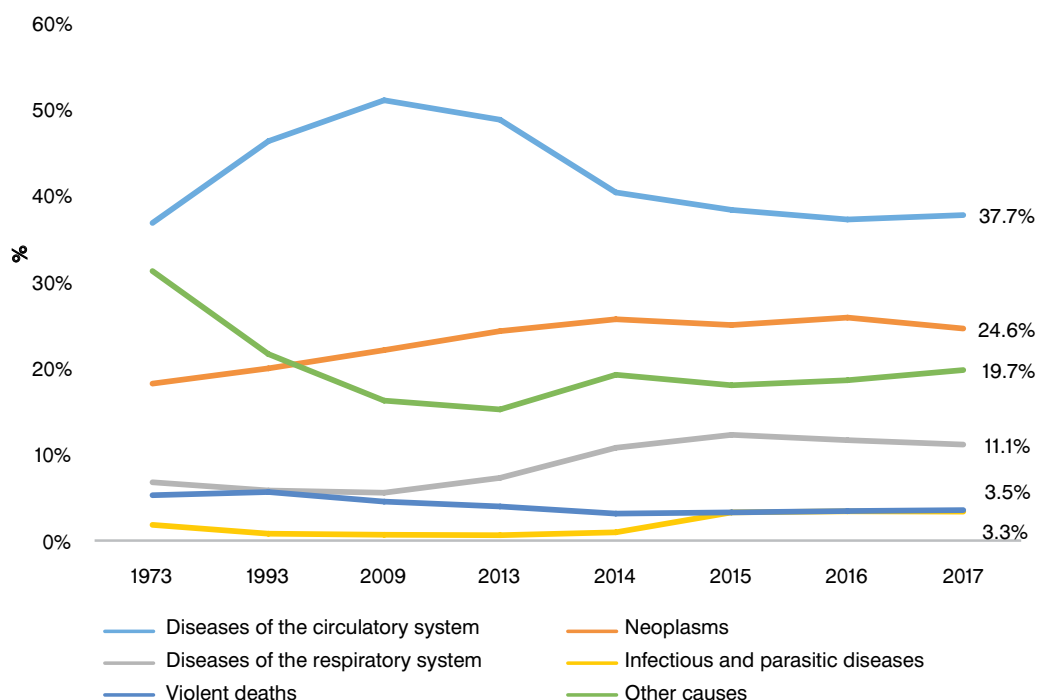


SOURCE: United Nations, World Population Prospects: 2019, data processing IOBE, Southern countries (Italy, Spain, Portugal). Dependency population ratio shows the number of dependents (aged 0-14 and over the age of 65) to the total active population (aged 15-64). A high ratio means that the overall economy faces a greater burden in supporting the ageing population. This indicator is on an upward trend in advanced economies, reflecting rising life expectancy and declining birth rates.

2.5 CAUSES OF DEATH-CHRONIC DISEASES-PREVENTION

Over time, a significant increase in the deaths due to circulatory system diseases is recorded, responsible for 37,7% of total deaths, despite the decline in recent years, while increase in neoplasms is recorded, accounting for 24.6% of total deaths. Interestingly, the increase in the share of diseases of the respiratory system after 2009, after a stabilization period, and finally the violent deaths and infectious and parasitic diseases compose a small part of the total deaths.

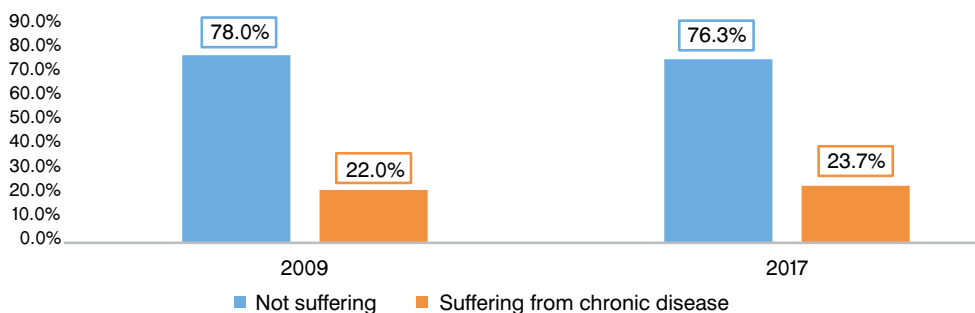
Figure 12: Causes of death (% of total deaths) - Greece



SOURCE: ELSTAT, 2019 data processing IOBE *Pursuant to the 9th Revision of the International Statistical Classification of Diseases, Injuries and Causes of Death (ICD-10) the following are included: cases when it is stated that an investigation by a medical or legal authority has not determined whether the injuries are accidental, suicidal or homicidal; deaths caused by injuries inflicted by law-enforcing agents (including military) on duty in the course of attempting to enforce the Law; deaths caused by injuries during war operations. Other causes: Diseases of the digestive system, Diseases of the genitourinary system, Diseases of the nervous system and sense organs, Endocrine and metabolic diseases, nutritional deficiencies and immune disorders

According to ELSTAT, one out of four persons (23.7%) aged 16 years and over reports suffering from a chronic illness or health problem. A chronic illness or health problem is reported by approximately one out of four women (25.6%) and one out of five men (21.7%).

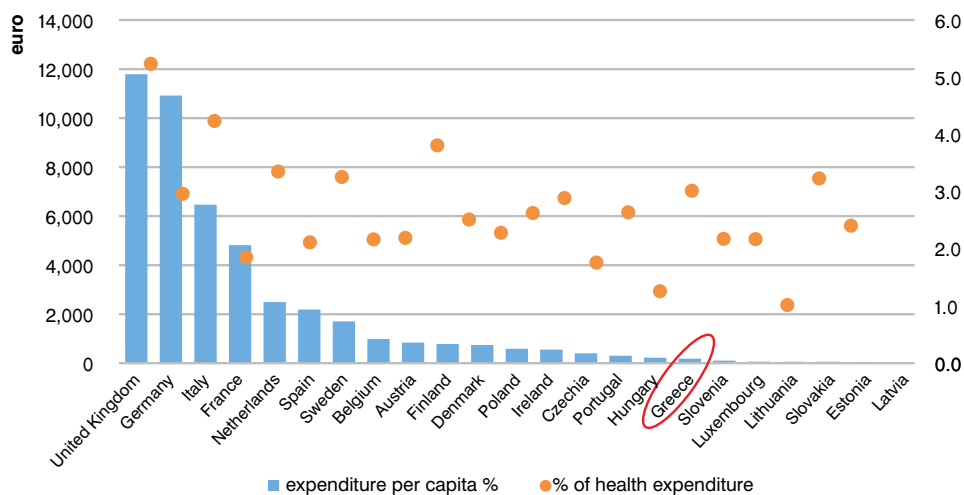
Figure 13: Percentage of population suffering from chronic health problem or chronic disease, 2009 and 2017



SOURCE: ELSTAT., 2018, Chronic illness or health problem mean illnesses or health problems which have lasted, or are expected to last, for 6 months or more, with or without medication

In 2017 the per capita spending on prevention in Greece reached €182, one of the lowest shares in EU, 1.3% of total health expenditure.

Figure 14: Prevention expenditure per capita and as a share (%) of total health expenditure, Greece-EU23 (2017)

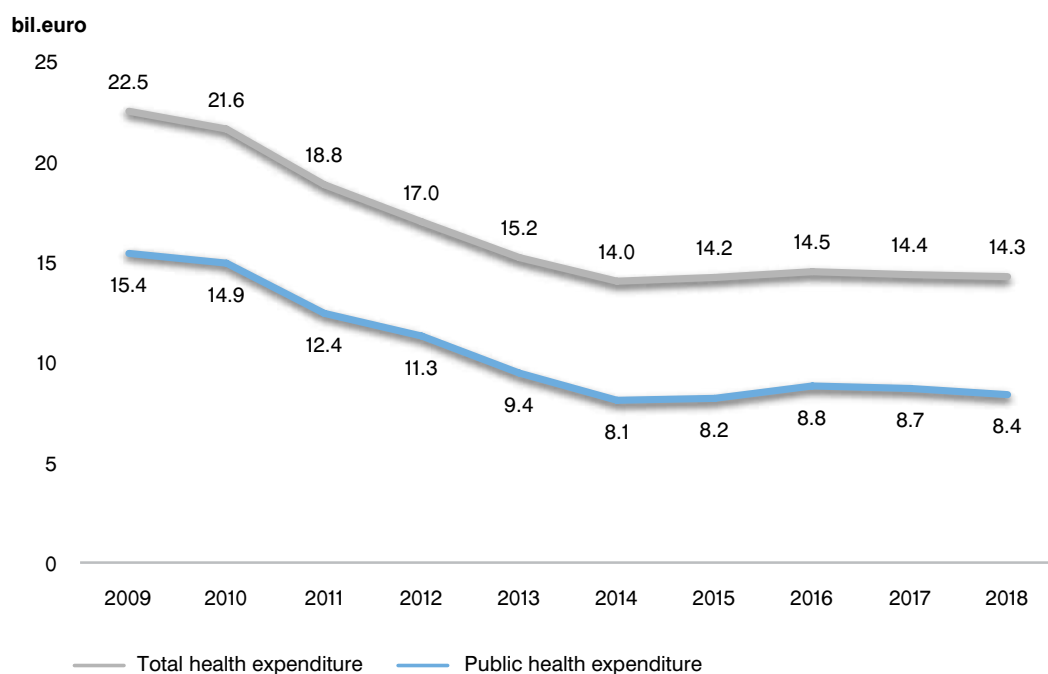


SOURCE: OECD, Statistics 2019

3.1 FUNDING ON HEALTH EXPENDITURE

In 2018, total health expenditure in Greece amounted to €14.3 bil., out of which €8.4 bil. composes public health expenditure and €5.8 bil. private health expenditure.

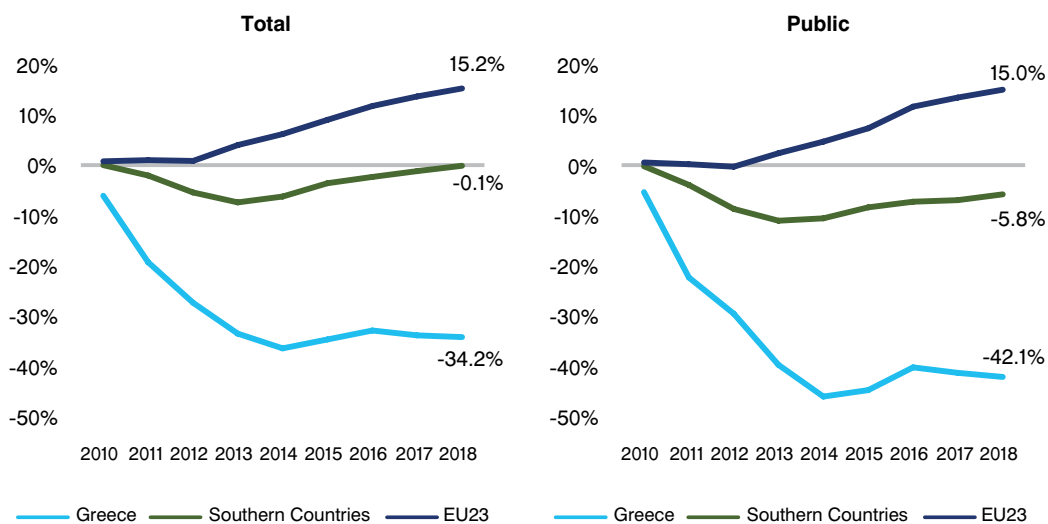
Figure 15: Total and public health expenditure (bil. €)



SOURCE: System of Health Accounts (SHA) 2018, ELSTAT, 2019, OECD Health Statistics, 2019, data processing IOBE. For the definitions of total and public funding on health expenditure, see Annex 7. Data are in current prices

The index of GDP cumulative change in total health expenditure showed a decline of -0.1% in Southern countries, while an increase of +15.2% was recorded in EU23 (a decrease of -34.2% in Greece during the same period). Similarly, a cumulative decline of -5.8% was recorded in public health expenditure in Southern countries, while an increase of +15.0% was noted for EU23 (-42.1% decrease in Greece during the same period).

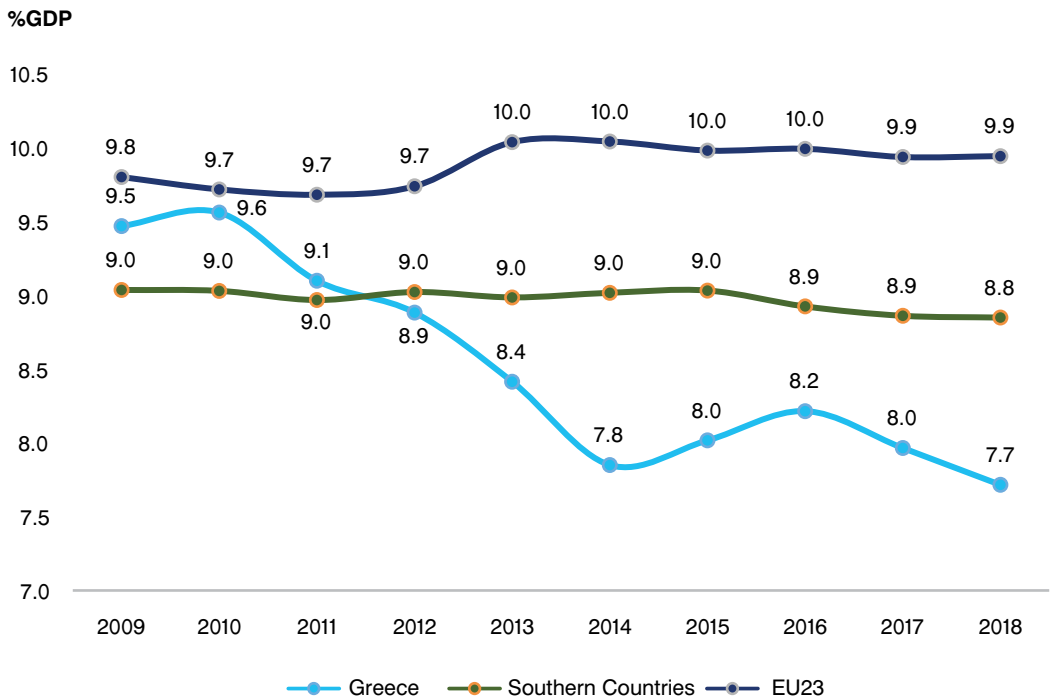
Figure 16: Index of cumulative change on health expenditure (%) Greece-EU23-Southern countries



SOURCE: System of Health Accounts (SHA) 2017, OECD Health Statistics, 2019, IOBE data processing Southern countries (Italy, Spain, Portugal). Percentage changes between 2009 and 2018 have been calculated in the Fixed-rate Price Data (\$ 2010 PPS, OECD).

In Greece, total health expenditure as a percentage of GDP accounted to 9.5% (2009) and decreased at 7.7% (2018), indicative of a faster reduction in health expenditure compared to GDP reduction during the same period.

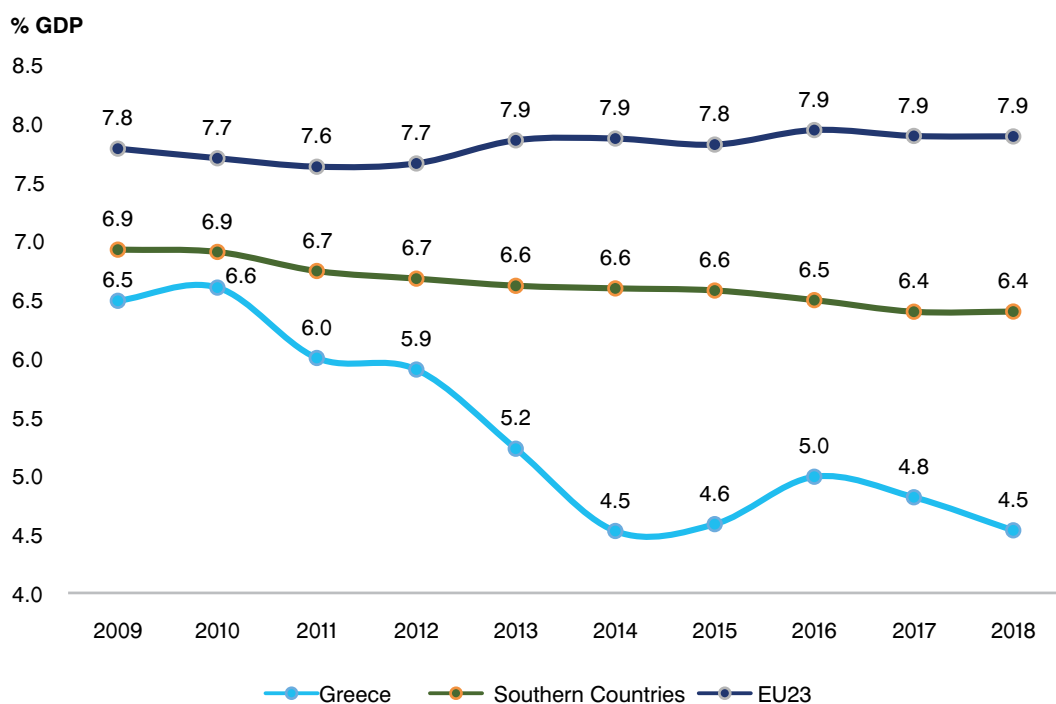
Figure 17: Total health expenditure (% GDP) Greece-EU23-Southern countries



SOURCE: System of Health Accounts (SHA) 2018, ELSTAT, 2019, Eurostat, OECD Health Statistics, 2019, data processing IOBE. Southern countries (Italy, Spain, Portugal). EU-23: (not available data for Bulgaria, Croatia, Cyprus, Romania and Malta)

Public health expenditure as a percentage of GDP in Greece amounted to 4.5% in 2018 compared to 6.5% in 2009. This evolution shaped the rate of public health expenditure in Greece below EU23 average (7.9%), which remains almost stable during 2009-2018. In Southern countries that implemented economic adjustment programs, the percentage was at 6.4% for 2018.

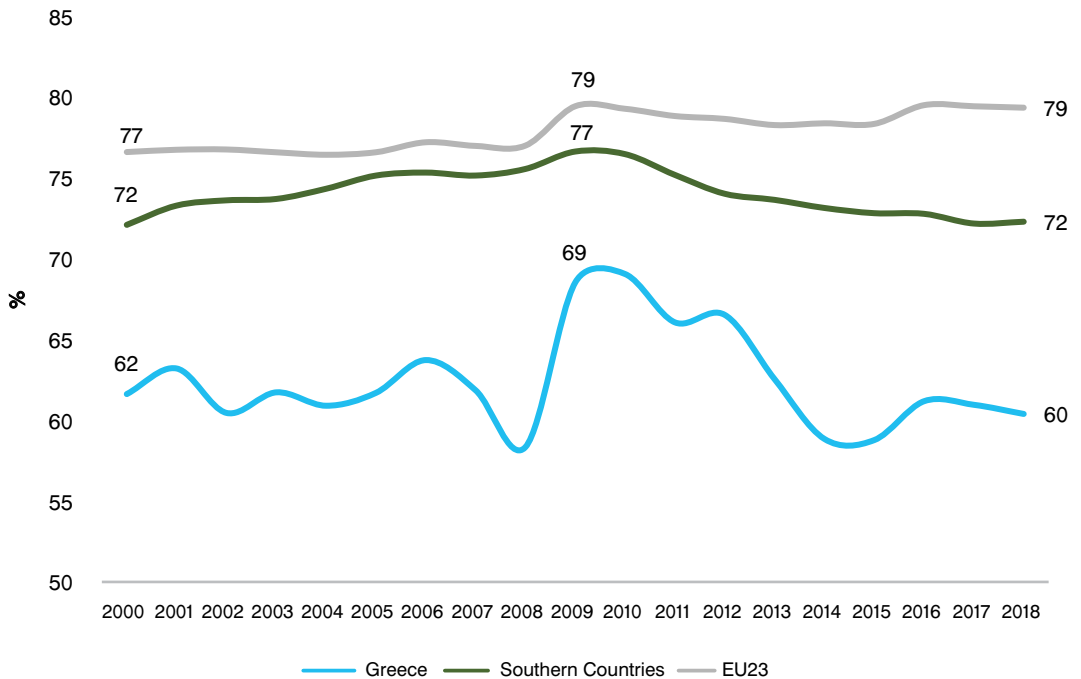
Figure 18: Public health expenditure (% GDP) Greece-EU23-Southern countries



SOURCE: System of Health Accounts (SHA) 2018, ELSTAT., 2019, OECD Health Statistics, 2019, data processing IOBE. Southern countries (Italy, Spain, Portugal). EU-23: (not available data for Bulgaria, Croatia, Cyprus, Romania and Malta)

Public health expenditure accounts for 60% of total funding for expenditure health in 2018, compared with 69% in 2009, remaining below the EU23 average and Southern countries.

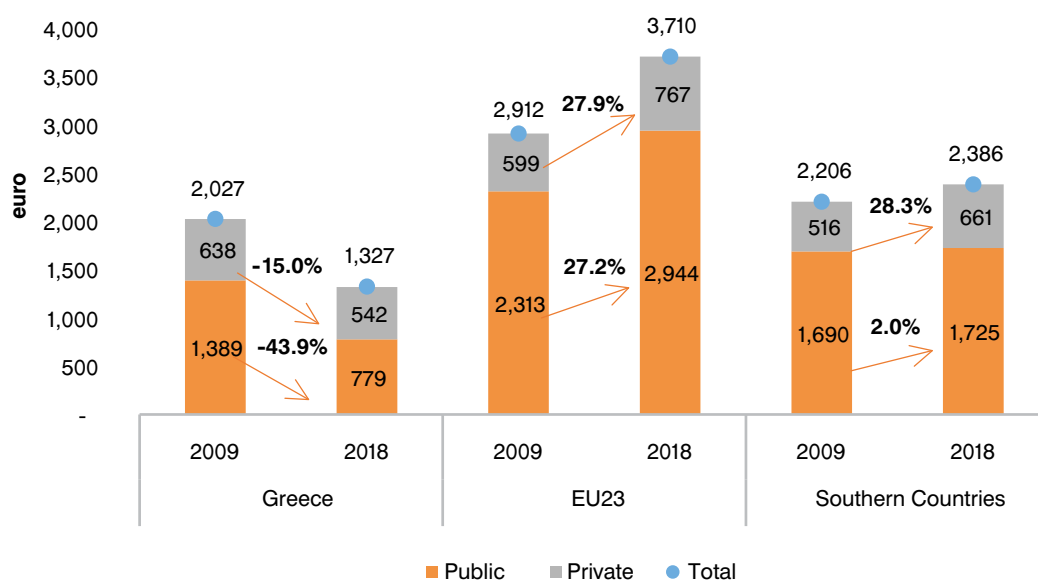
Figure 19: Public health expenditure (% of total expenditure) Greece-EU23-Southern countries



SOURCE: OECD Health Statistics, 2019, data processing IOBE. Southern countries (Italy, Spain, Portugal)

Total health expenditure per capita in Greece amounted to €1,327 in 2018 compared to €2,027 in 2009, that is €1,059 less than the average of Southern countries. Public health expenditure per capita declined in Greece by -43.9% between 2009 and 2018 and amounted to €779 compared to an increase of +27.2% in EU23 and a slower increase in Southern countries of 2.0% during the same period.

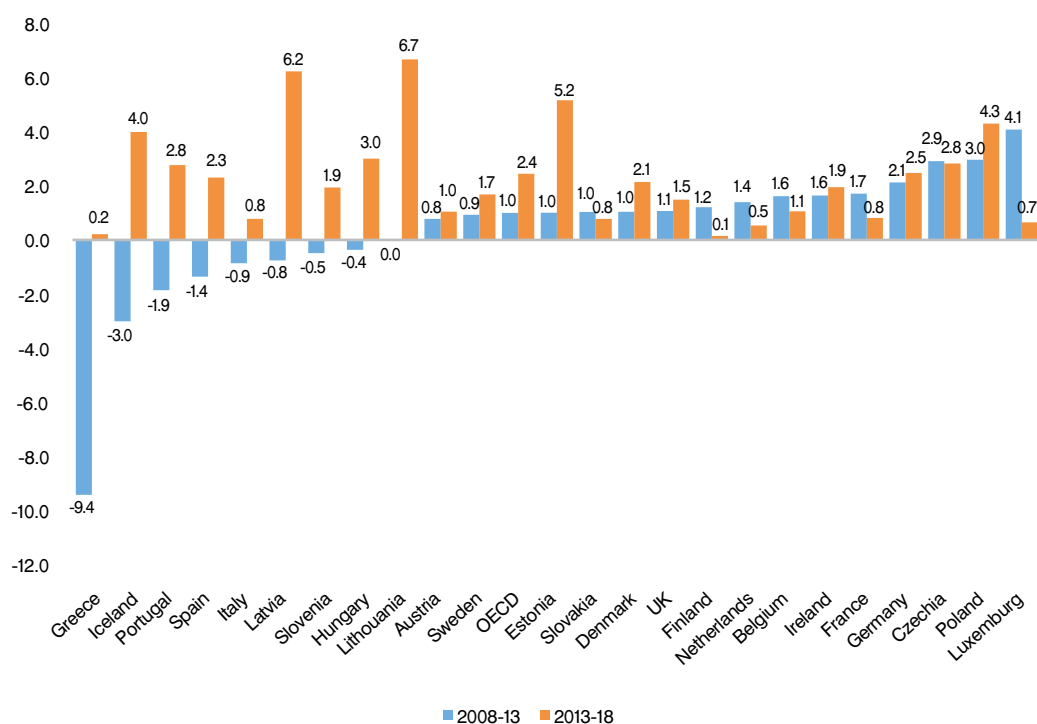
Figure 20: Total per capita health expenditure Greece-EU23-Southern countries



SOURCE: System of Health Accounts (SHA) 2018, OECD Health Statistics, 2019, data processing IOBE Southern countries (Italy, Spain, Portugal). EU23 due to unavailability of data for other countries

Over the period 2008-2013, the per capita health expenditure in Greece declined by -9.4%, the largest among OECD countries, with an increase of 0.2% in the period 2013-2018.

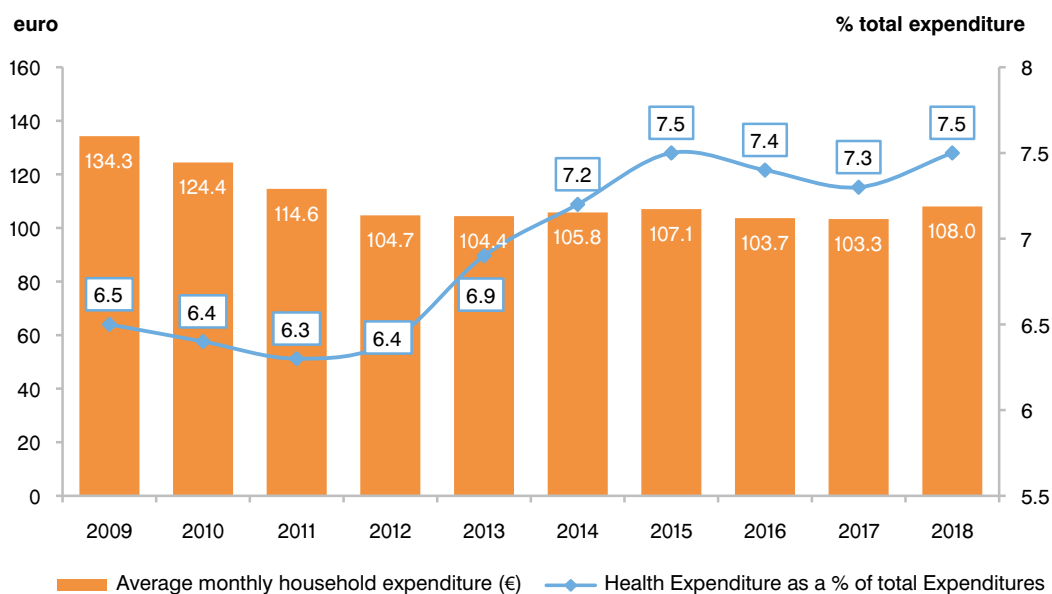
Figure 21: Average per capita health expenditure evolution, OECD countries, 2008-2013 and 2013-2018



SOURCE: OECD Health Statistics, 2019

Households' monthly health expenditure was contracted by -19.6% during 2009-2018, when it reached €108.0, which accounted for 7.3% of total household expenditure (6.5% in 2009), indicating households' reduced purchasing power and increased participation in health expenditure.

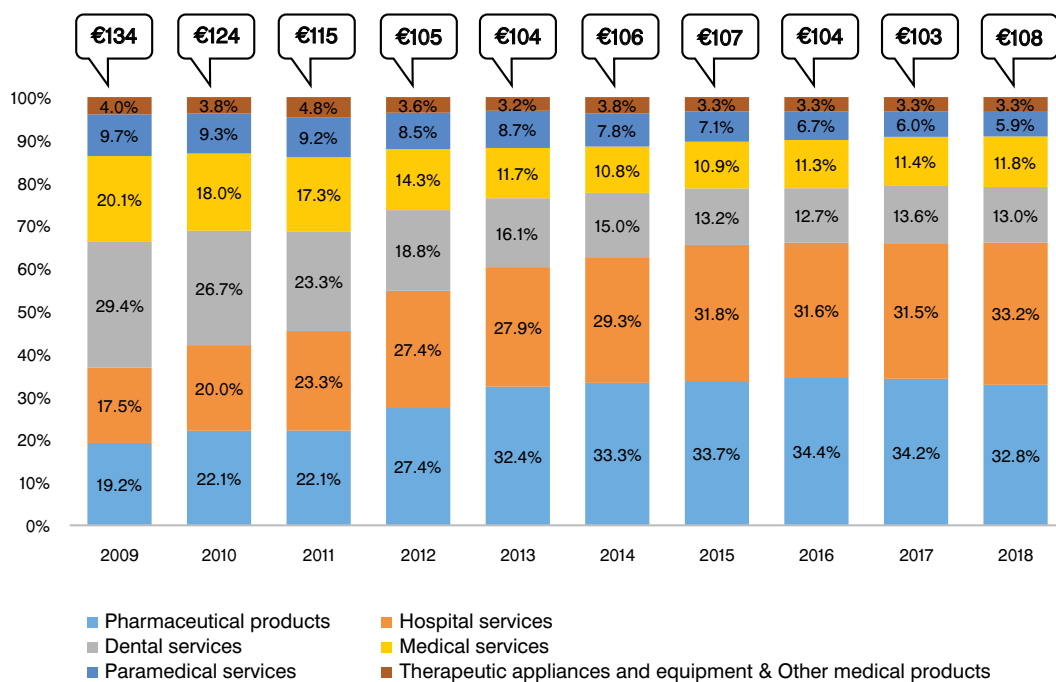
Figure 22: Health expenditure of households (€) per month-Greece



SOURCE: ELSTAT 2019, data processing IOBE. Household Budget Survey, which is conducted annually by the ELSTAT, provides information for the composition of total household spending, according to various socioeconomic characteristics of each household.

During the economic crisis period, there was a shift of household expenditure mainly towards pharmaceutical and hospital care. Specifically, from €108 monthly health expenditure per household, 32.8% refers to pharmaceuticals and 33.2% to hospital services, 13.0% to dental services and 11.8% to other medical services.

Figure 23: Breakdown of household health expenditure (%) per month - Greece

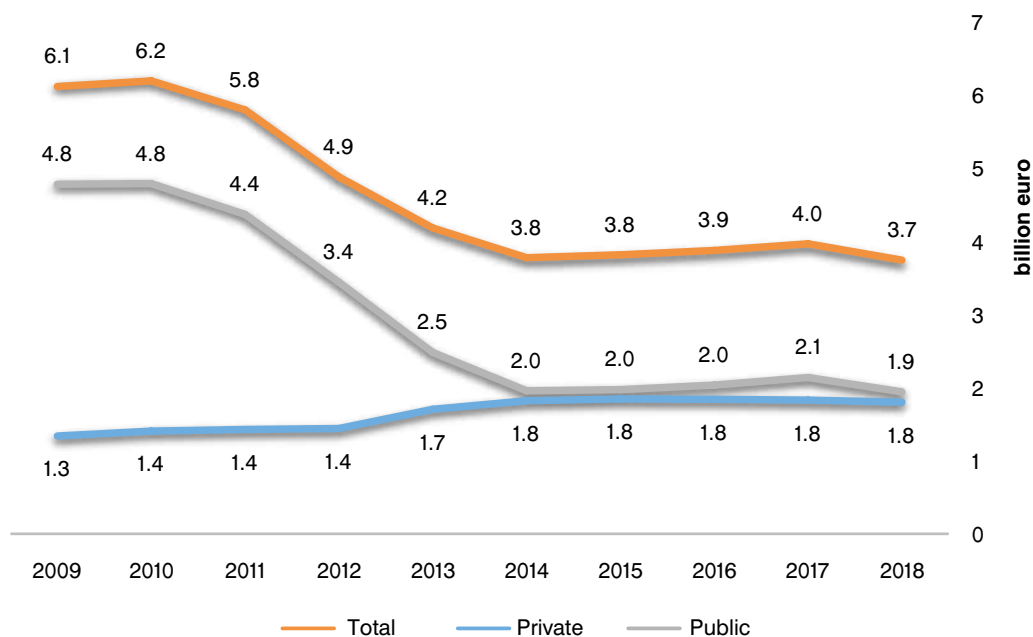


SOURCE: ELSTAT, 2019, data processing IOBE

3.2 PHARMACEUTICAL EXPENDITURE

Total expenditure for pharmaceuticals and other medical non-durable goods accounted for €3.7 bil. in 2018, recording a decrease of -38.8% compared to 2009. Correspondingly, public expenditure for pharmaceuticals and other medical non-durable goods from €4.8 bil. in 2009 amounted to €1.9 bil. in 2018, recording a further decline of -59.4%, while private expenditure for pharmaceuticals and other medical non-durable goods increased from €1.3 bil. in 2009 to €1.8 bil. 2018.

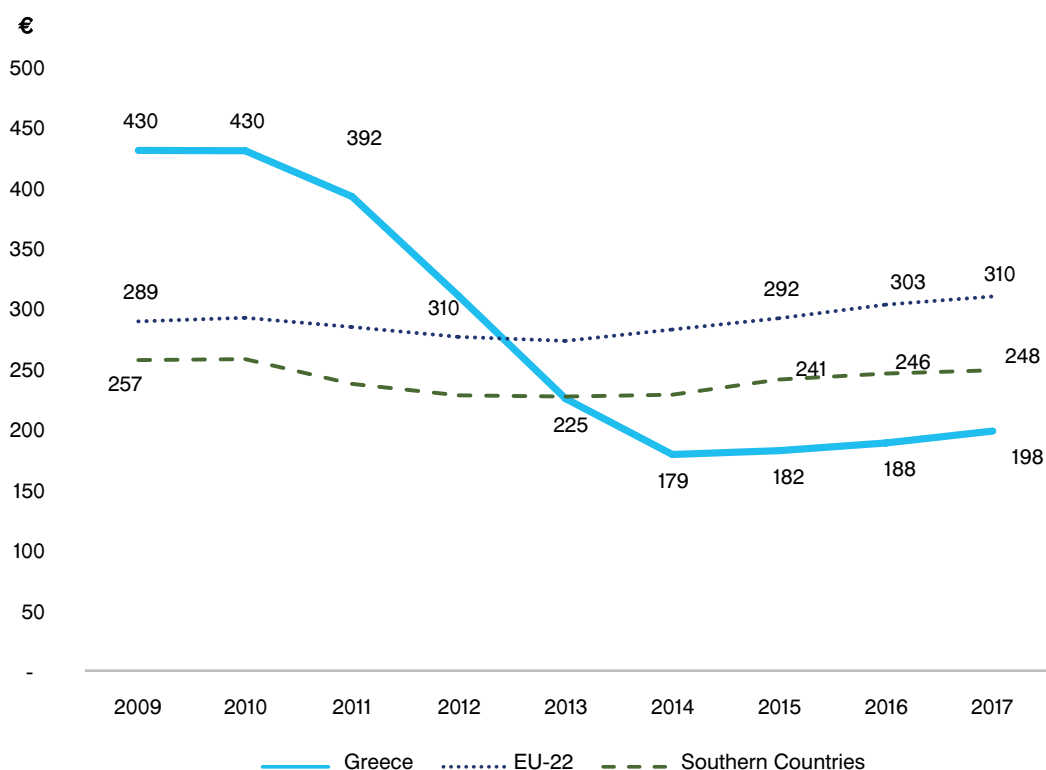
Figure 24: Total expenditure for pharmaceuticals and other medical non-durable goods (bil. €)-Greece



SOURCE: System of Health Accounts (SHA) 2018, ELSTAT, 2019, data processing IOBE. Expenditure for pharmaceuticals and other medical goods, as reported in the OECD and SHA, includes expenditure on final consumption by outpatients of prescription and non-prescription pharmaceuticals, on-patented and generics. Medical goods are also recorded in the same category (see Annex 7).

Similarly, a downward trend observed in public per capita expenditure for pharmaceuticals and other medical non-durable goods, from €430 in 2009 to €198 in 2017. Public per capita expenditure for pharmaceuticals and other medical non-durable goods in EU22 increased from €289 in 2009 to €310 in 2017 approximately €112 higher than Greece, while in Southern countries was €248.

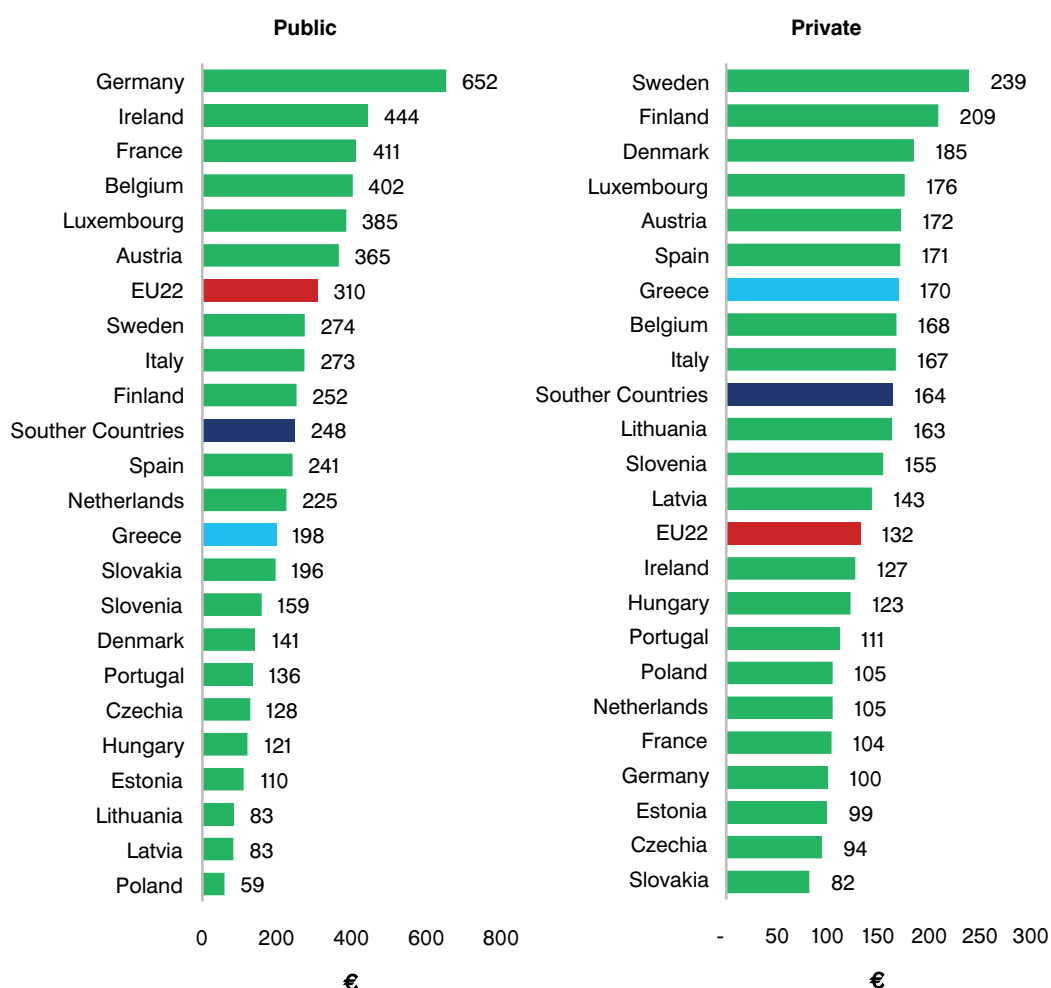
Figure 25: Public per capita expenditure for pharmaceuticals and other medical non-durable goods Greece-EU22-Southern countries



SOURCE: OECD Health Statistics, 2019, Eurostat 2019, data processing IOBE. Southern countries (Italy, Spain, Portugal).EU-22: (data not available for Bulgaria, Croatia, Cyprus, Romania, Malta, UK)

More specifically, the higher public per capita expenditure in 2017 for pharmaceuticals and other medical non-durable goods was recorded in Germany, Ireland and France, while Greece (€198) is below the average of EU22 (€310). On the contrary, private per capita expenditure for pharmaceuticals and other medical non-durable goods in Greece (€170) is higher than the average of EU22 (€132), ranking 7th among EU countries.

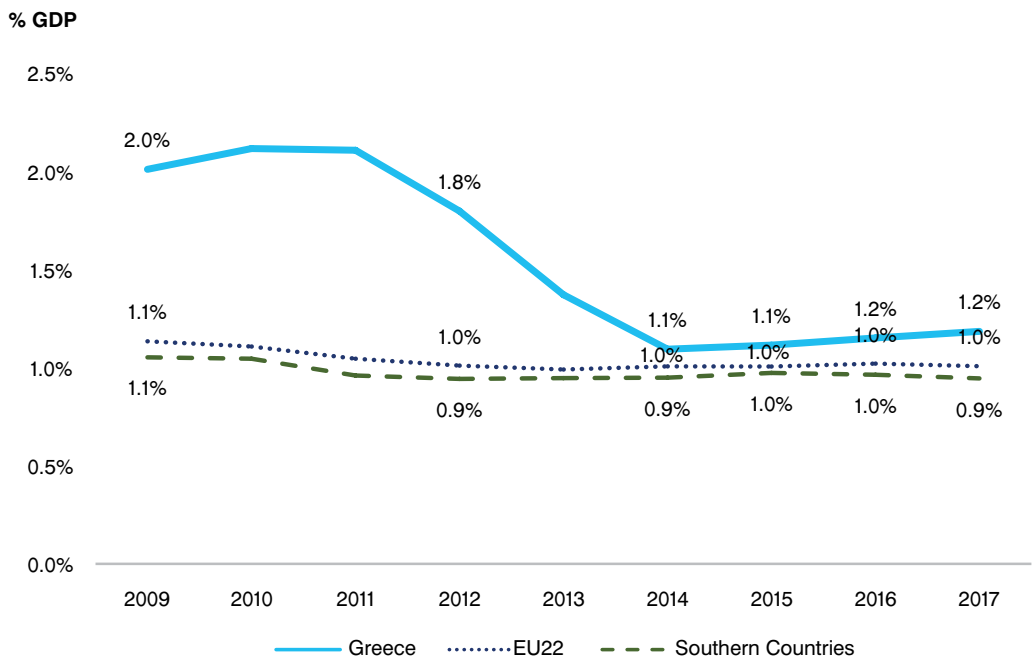
Figure 26: Public & private per capita expenditure for pharmaceuticals and other medical non-durable goods (2017)



SOURCE: OECD Health Statistics, 2019, Eurostat, 2019, data processing IOBE. Southern countries (Italy, Spain, Portugal). EU-22: (data not available for Bulgaria, Croatia, Cyprus, Romania, Malta, UK).

Public expenditure for pharmaceuticals and other medical non-durable goods as a percentage of GDP in Greece is estimated at 1.2% of GDP in 2017 compared to 2% in 2009, close to EU22 and Southern countries.

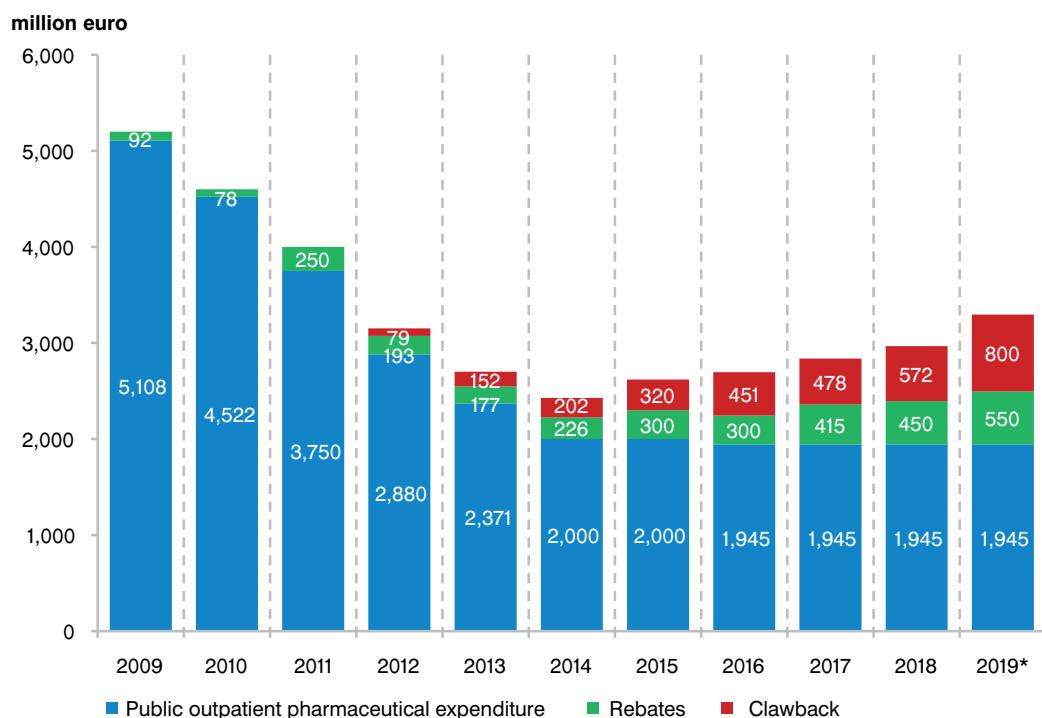
Figure 27: Public expenditure for pharmaceuticals and other medical non-durable goods (% GDP) Greece-EU22-Southern countries



SOURCE: OECD Health Statistics, 2019, Eurostat, 2019, data processing IOBE. Southern countries (Italy, Spain, Portugal). EU-22: (data not available for Bulgaria, Croatia, Cyprus, Romania, Malta, UK).

Public outpatient pharmaceutical expenditure amounted to €1,945 bil. in 2019 compared to €5.1 bil. in 2009 (at the same level for the last 5 years), resulting in an overall decrease by -61.9%. Accordingly, there was a significant increase in the contribution of pharmaceutical industry through mandatory returns and discounts (clawback and rebates). Specifically, in 2019 industry's contribution was €1.355 bil. recording an increase of 32% in comparison to previous year.

Figure 28: Outpatient pharmaceutical expenditure (excluding patients' contribution)

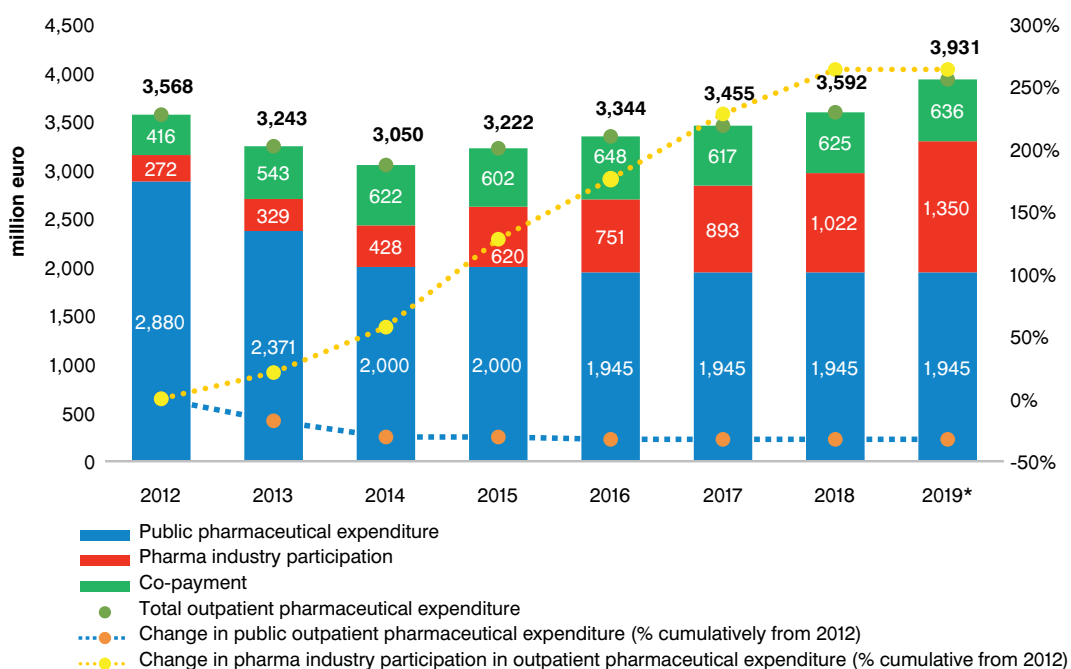


SOURCE: EOPY 2012-2019, State Budget 2014-2019, data processing IOBE-SFEE Note: Although the pharmaceutical companies sell at ex-factory prices, the state calculates the clawback at retail prices.

* For 2019, clawback and rebates is estimation

Total outpatient pharmaceutical expenditure (including estimated patients' contribution) amounted to ~€3.9 bil. in 2019. However, the significant decline in public outpatient pharmaceutical expenditure by 61% during 2009-2019 resulted in a 264% increase on industry's contribution over the same period.

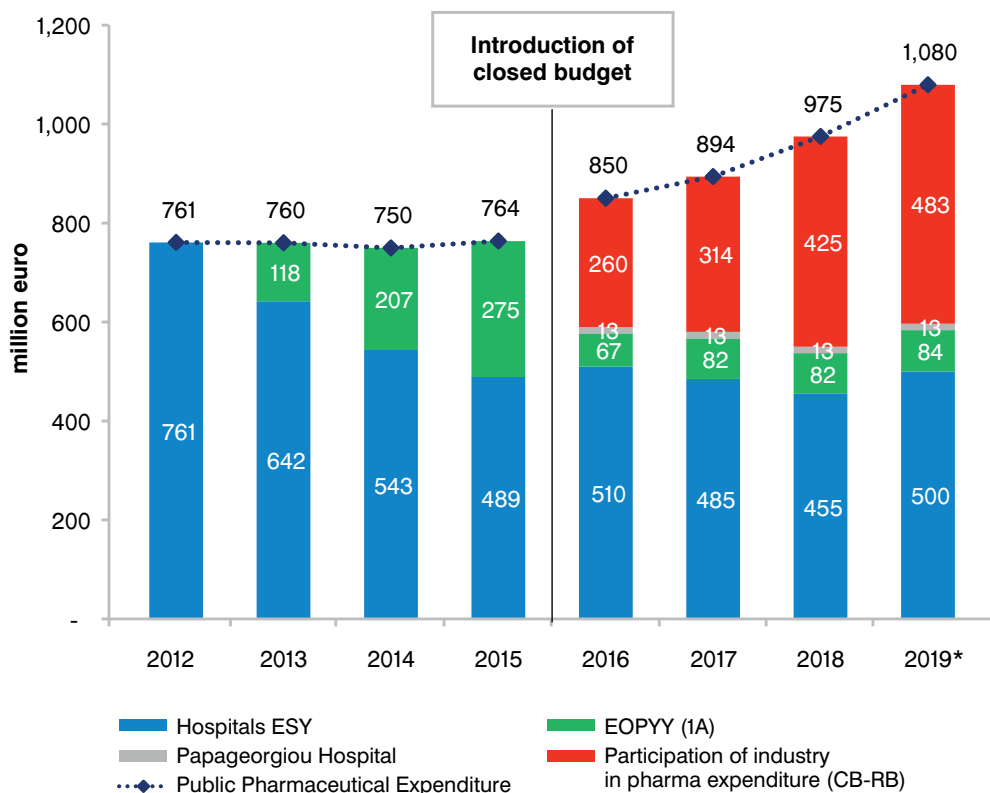
Figure 29: Total outpatient pharmaceutical expenditure (including industry's' and patients' contribution)



SOURCE: EOPYY 2012-2019, State Budget 2014-2019, data processing IOBE-SFEE Patient participation: What the patient pays to the reimbursed market (i.e. 0%, 10%, 25%) and the burden resulting from the difference between Retail Price - Reimbursement Price.

Public hospital pharmaceutical expenditure was set at €500 mil. for 2019, decreased by -44% compared to 2015 (€764 mil.), before introducing closed budget. The reduction of public hospital pharmaceutical expenditure resulted in a shift towards industry (through clawback and rebates), estimated at €483 mil. for 2019.

Figure 30: Public hospital pharmaceutical expenditure and industry's contribution



SOURCE: EOPYY 2012-2019, State Budget 2014-2019, data processing IOBE-SFEE. Note: Estimations for 2019 for industry's contribution. EOPYY (1A) include Aretaio hospital

3.3 PATIENTS' CONTRIBUTION

Public pharmaceutical expenditure includes the expenditure of all the social security funds for prescribed medicines, i.e. medicines that are reimbursed by Social Security Funds (SSF). Net public pharmaceutical expenditure is the final amount paid by the SSFs after deduction of rebates & clawback.

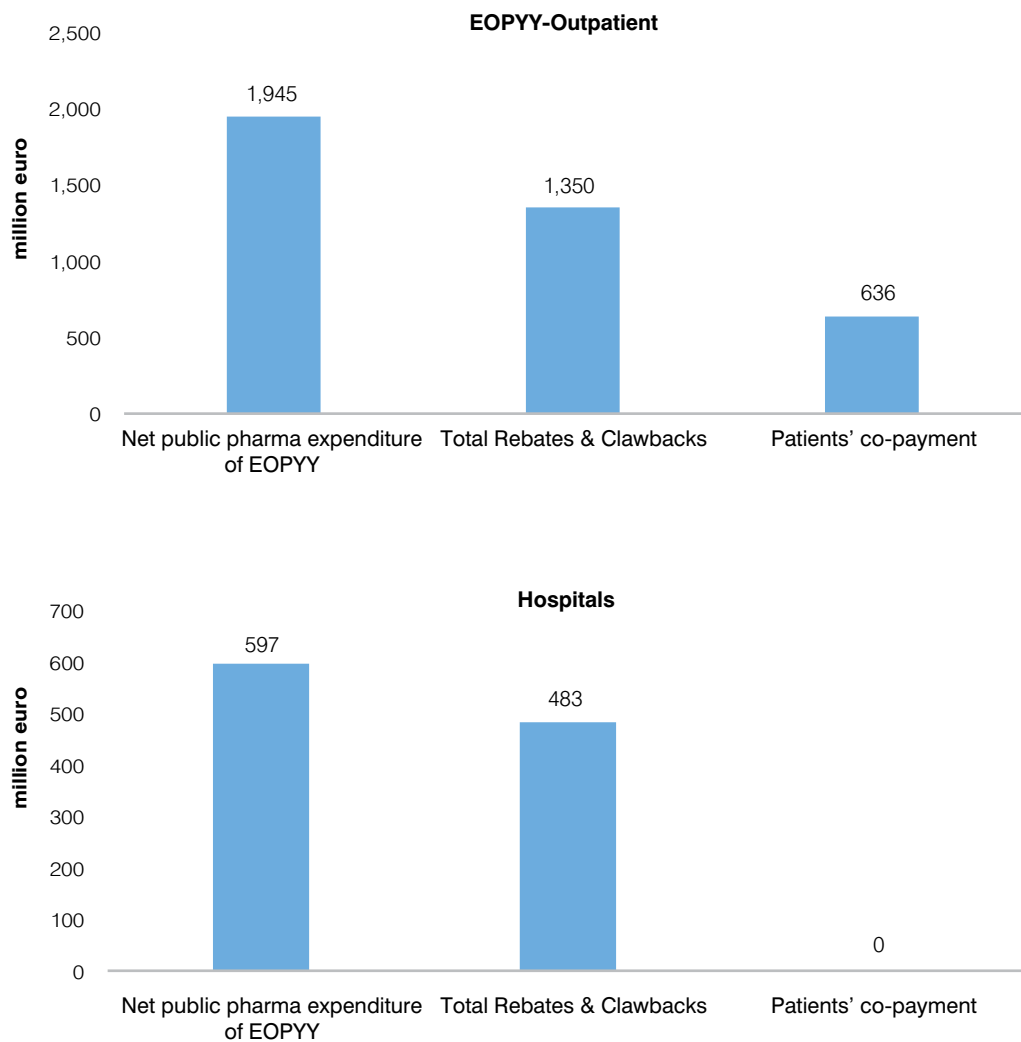
Private pharmaceutical expenditure includes co-payment rates of insured persons for reimbursed medicines (statutory participation & the additional charge incurred when the patient selects a medicine with a higher Retail Price than the Reimbursement Price), the private costs of consumers (patients) for non-reimbursed pharmaceuticals and related products but also for those medicines they pay or choose to pay in full, as well as the reimbursement of part of the expenditure by private insurance companies.

Patient co-payment in reimbursed medicines is distinguished in:

- "Statutory co-payment: 0% or 10% or 25% of the reimbursement price
- Charge resulting from the difference between Retail Price and Reimbursement Price when the patient selects a medicine with Retail Price Higher than the Reimbursement Price

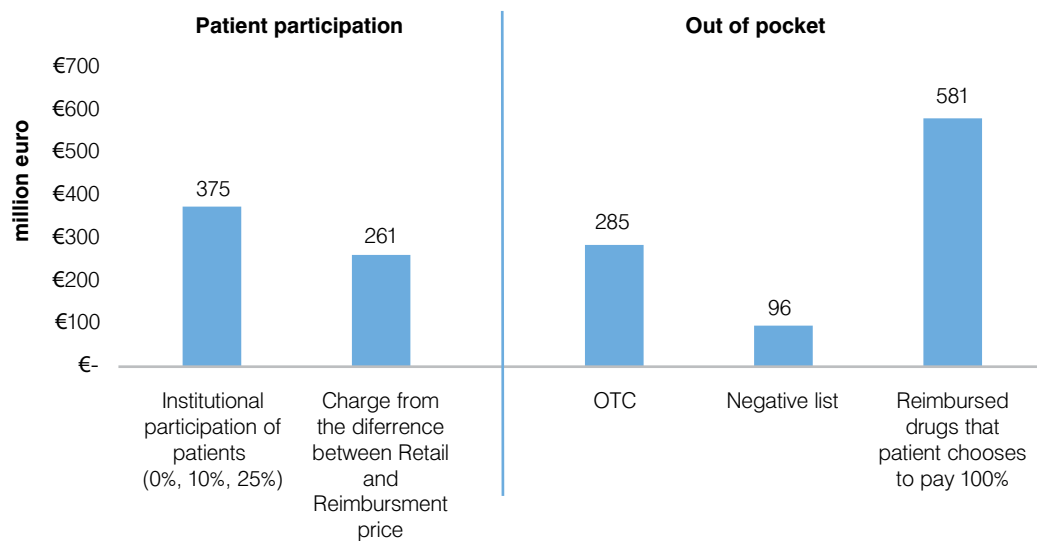
Other private payments for a medicine contain:

- either non-prescription medicines (OTC)
- either prescribed medicines which are not reimbursed (Negative List)
- either prescribed medicines of the reimbursement list, but the patient chose not to use his insurance right and chose to pay them entirely out of his pocket..

Figure 31: Patient participation in the reimbursement market (2019)

SOURCE: State Budget, company notes, data from IDIKA, data processing SFEE

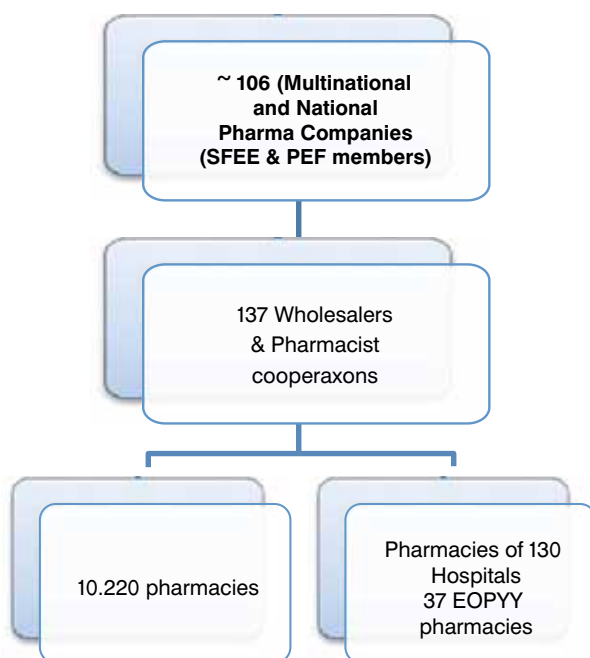
Figure 32: Total private pharmaceutical expenditure (2019)



SOURCE: Data from IDIKA (Institutional Patient Participation), OTC and Negative list, SFEE calculations based on EOPYY and IQVIA data (MAT3/2019)

4.1 SUPPLY CHAIN FOR PHARMACEUTICAL PRODUCTS IN GREECE

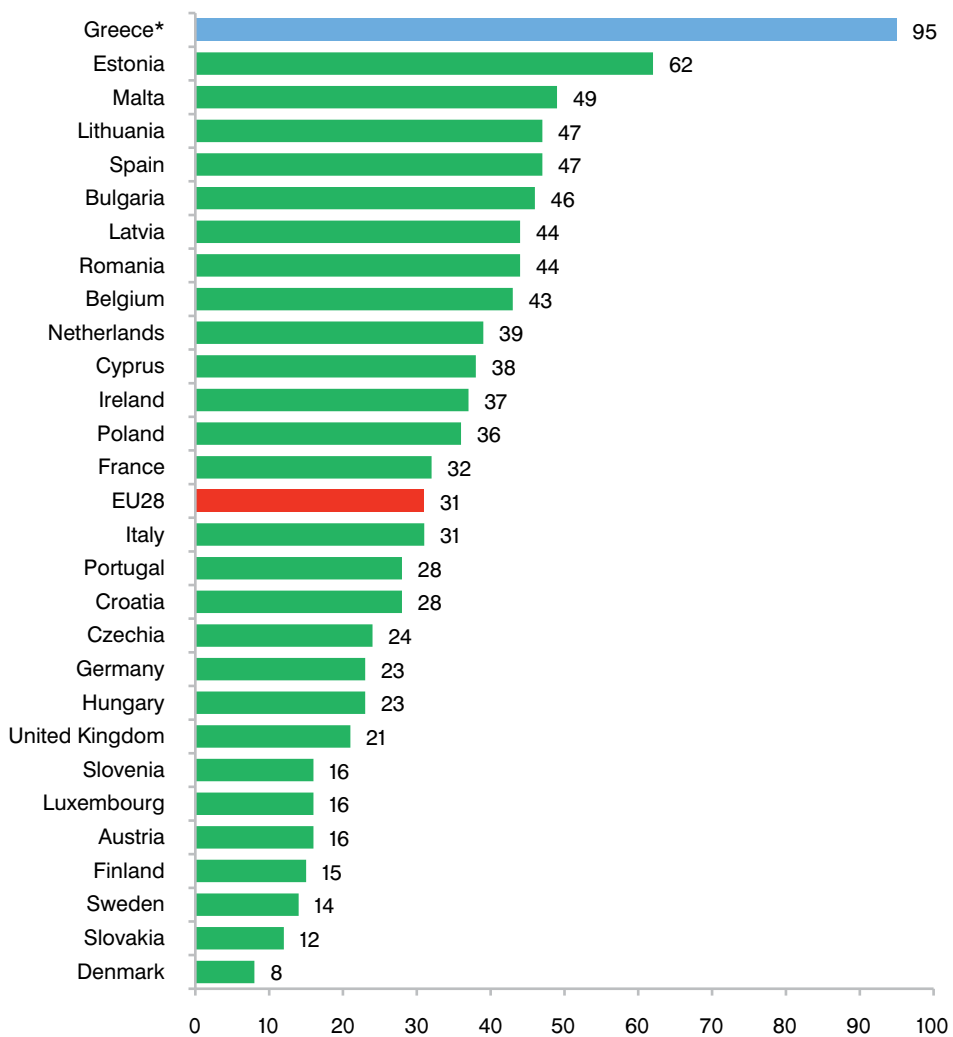
The production and distribution of pharmaceuticals is one of the most dynamic sectors in the Greek industry. Supply chain for pharmaceutical products is comprised of pharmaceutical companies (both manufacturers and importers), wholesalers (both storage and distribution) and pharmacies. More specifically, pharmaceutical products, except products for hospital use only which are provided through sales to hospitals, follow the path: pharmaceutical company - wholesalers - pharmacy.



SOURCE: ELSTAT, EOPYY, PanHellenic Association of Pharmaceutical Wholesalers

With a pharmacy density of 95 pharmacies per 100.000 inhabitants. Greece comes first in 2018 among the EU-28 average of 31 pharmacies per 100.000 inhabitants.

Figure 33: Number of pharmacies per 100.000 inhabitants. EU 28 (2018)



SOURCE: ABDA, German Pharmacies, Figures Data Facts 2019, ELSTAT., 2019 * Data for Greece come from the latest available ELSTAT.

In 2018, 10,220 pharmacies operated in Greece, out of which 3,684 pharmacies (36%) were in the Region of Attiki. The number of wholesalers in 2018 amounted to 128 in 2017 compared to 137 in 2018.

Figure 34: Pharmacies and wholesalers- Greece



SOURCE: ELSTAT, 2019

EOPYY PHARMACIES

EOPYY initially operated 5 pharmacies in Attica region and 1 in Thessaloniki, supplying high cost medicines without copayment and without the confirmation of the prescription by the relevant social security fund (except 2 month). Currently, 37 pharmacies of EOPYY are in operation. In other parts of the country, insured citizens can obtain high cost medicines for the treatment of serious diseases (Law 3816/2010) from EOPYY's local health units, after placing an order.

Based on the ministerial decree published in Government Gazette 64/B'/16-01-2014, the list of high-cost, serious diseases pharmaceutical products that fall under the provisions of L.3816/2010 was split into two distinct lists. The first list relates to pharmaceutical products that are only available for hospital use, while the second list includes those pharmaceuticals, which their use begins in the hospital and can be continued on an outpatient setting. EOPYY pharmacies and public hospitals procure products of the first list in hospital price reduced by 5% and the corresponding rebates, while pharmaceuticals of second list followed the way of pricing applied under the provisions set by the Ministry of Health.

By 2015, most high-cost drugs (N.3816 / 2010) was provided by the EOPYY pharmacies and hospital pharmacies.

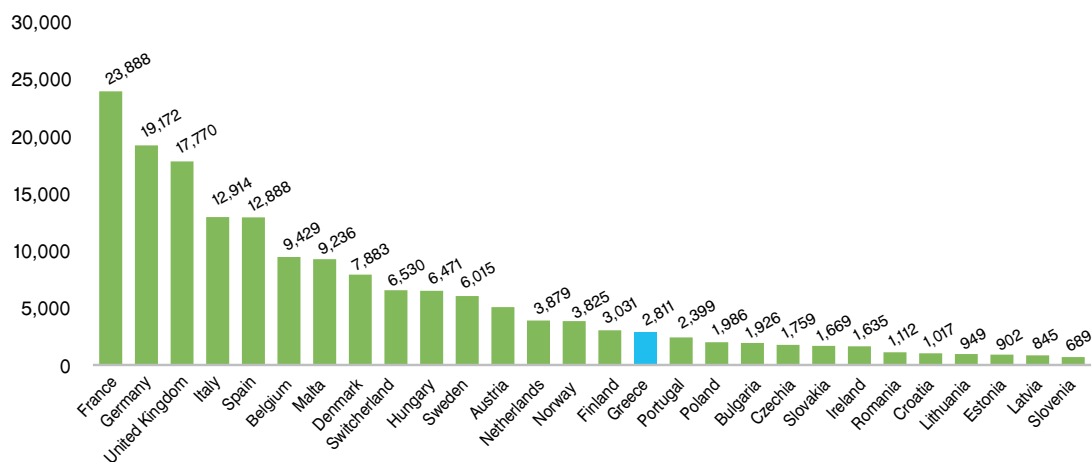
Since January 2016, under the new legislative regulation for hospital clawback (N. 4354 / 12.16.2015, Section D, Article 41), all high-cost medicines that their use is hospital only (Annex 1A) are exclusively administered from pharmacies in public hospitals.

EOPYY pharmacies provide exclusively high-cost drugs belonging to Annex 1B and Annex 1A for use only in specific private clinics.

4.2 RESEARCH AND DEVELOPMENT (R&D)

In Greece, 2,811 clinical studies (1,604 completed) were conducted up to 2019, number similar to that in countries such as Finland..

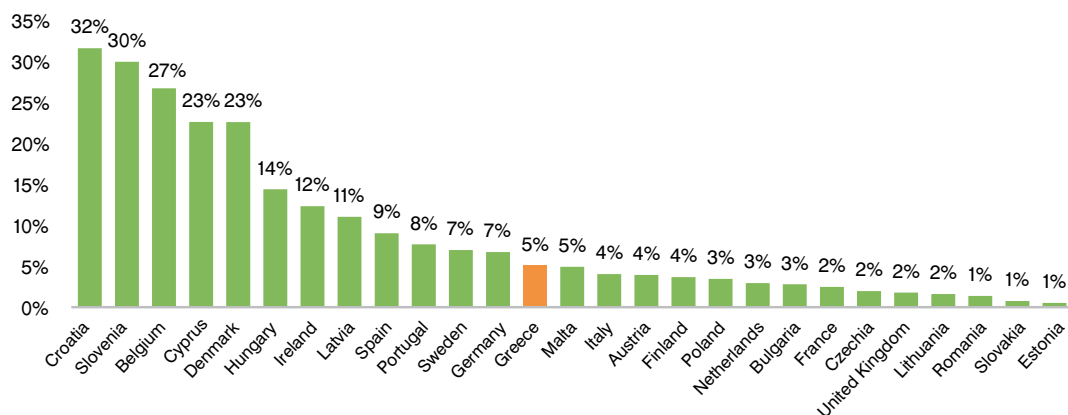
Figure 35: Total number of clinical trials, all phases and stages (2019)



SOURCE: Clinical trials.gov, 2019

Research & Development expenditure in the pharmaceutical industry (€51 mil.) accounts for 5% of total R&D expenditure in Greece in 2017, share lower than 2015 (8%).

Figure 36: Pharmaceutical R&D expenditure (% of total R&D expenditure) (2017)

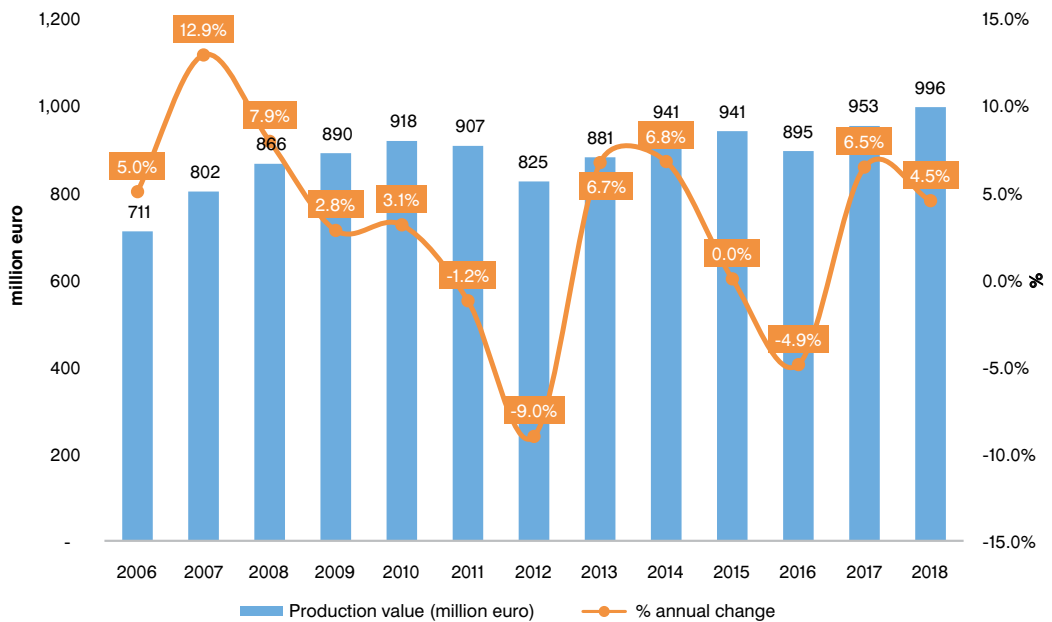


SOURCE: Eurostat, 2019, data processing IOBE

4.3 PRODUCTION

According to Prodcom database (Eurostat) in terms of value (ex-factory prices), pharmaceutical production in Greece was estimated at 1,0 bil. in 2018, approximately 4.5% higher than in 2017.

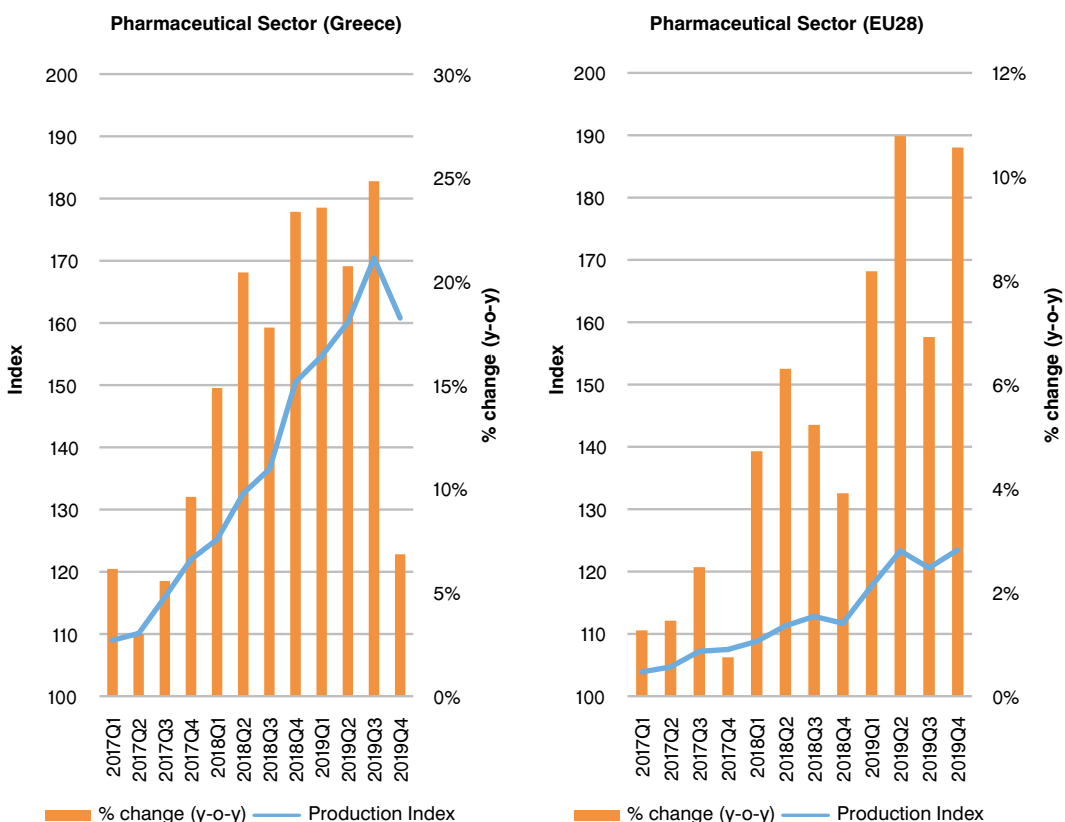
Figure 37: Production of pharmaceutical products (mil. €)



SOURCE: Eurostat 2019, PRODCOM Database, data processing IOBE. *Any changes based upon review of data from Eurostat

The industrial index of domestic pharmaceutical production, recorded a significant increase in 2018 and 2019, despite the slowing down on the last quarter of 2019, to 160,8 points, 60,8% higher than 2015. The pharmaceutical production index in EU28 had smallest increase in comparison with the Greek sector, due to higher starting point.

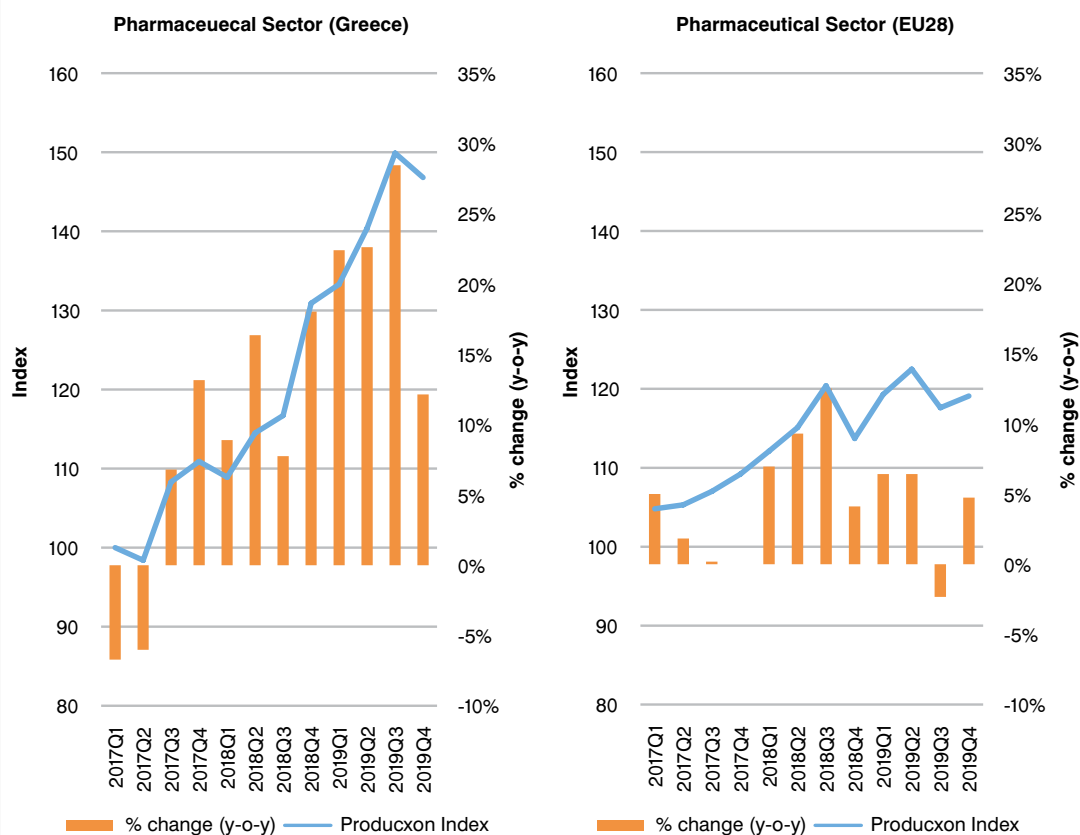
Figure 38: Industrial index of domestic pharmaceutical production (2015=100)



SOURCE: Eurostat, 2019, seasonally adjusted and adjusted data by working days, data processing IOBE

The turnover of pharmaceutical production is rising in 2019, and the third quarter, against a fall in 2017, leading to an increase up to 50% since 2015. In EU28 percentage changes are much smoother, with an increase by 5% in the last quarter of 2019.

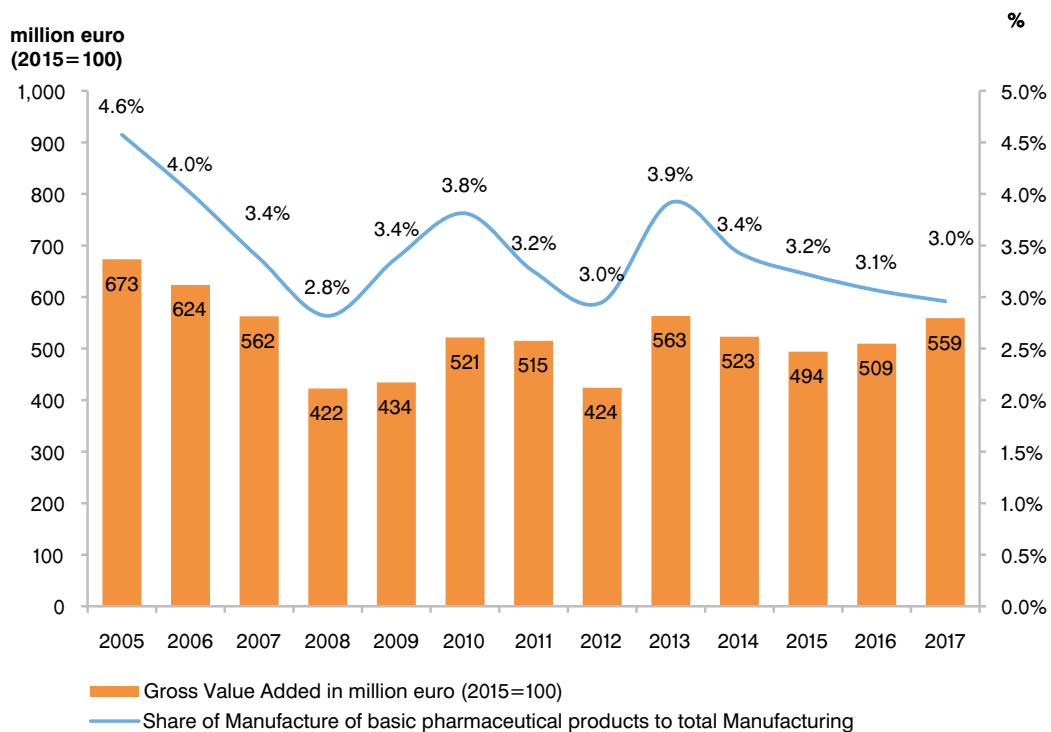
Figure 39: Turnover index in domestic pharmaceutical production (2015= 100)



SOURCE: Eurostat, 2019, seasonally adjusted and adjusted data by working days, data processing IOBE

The gross Value Added (GVA) of domestic pharmaceutical production is estimated at €559 mil. in 2017, higher by 9.7% compared to 2016, and amounted with a share of 3.0% in total manufacturing sector.

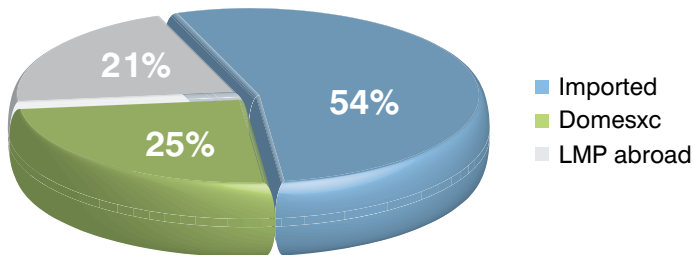
Figure 40: Gross Value Added of pharmaceutical production and share in manufacturing (%)



SOURCE: Eurostat, 2019, data processing IOBE*Any changes based upon review of data from Eurostat* C21: Manufacture of basic pharmaceutical products and pharmaceutical preparations include only the companies active in the production of medicines and pharmaceutical preparations. In C21 manufacturing companies are not included firms that belong to subsector 46.46 Wholesale of pharmaceutical products.

Strengthening co-operation between international and domestic factories is a key pillar of the country's pharmaceutical sector activity. Specifically, 21% of pharmaceuticals are produced in domestic factories and in certified production facilities with high-educated personnel, while with appropriate incentives, domestic production of international pharmaceutical products may increase.

Figure 41: Percentage of pharmaceutical production in Greece and abroad (in market volume)

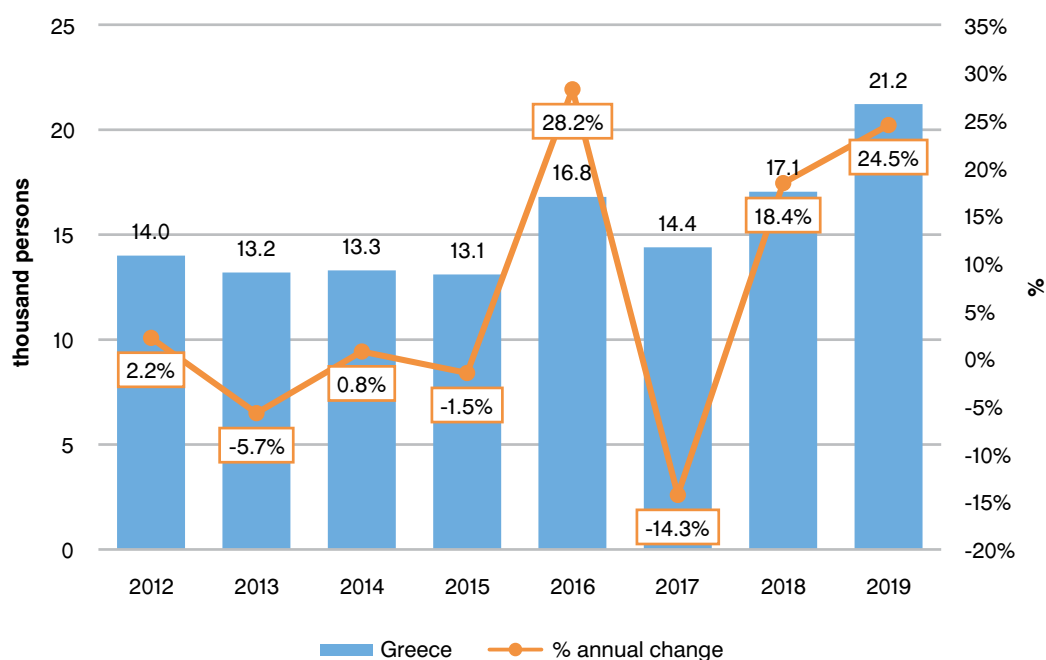


SOURCE: IQVIA FY 2019, *Locally Manufactured products LMP abroad = Products of international companies manufactured / packaged in Greece * Factories: 28 Greek-owned factories and 1 foreign-owned factory

4.4 EMPLOYMENT

In Greece 21.2 thousand people were employed in pharmaceutical production in 2019, demonstrating an increase of 24.5% compared to 2018.

Figure 42: Employment in pharmaceutical production (thousand persons)

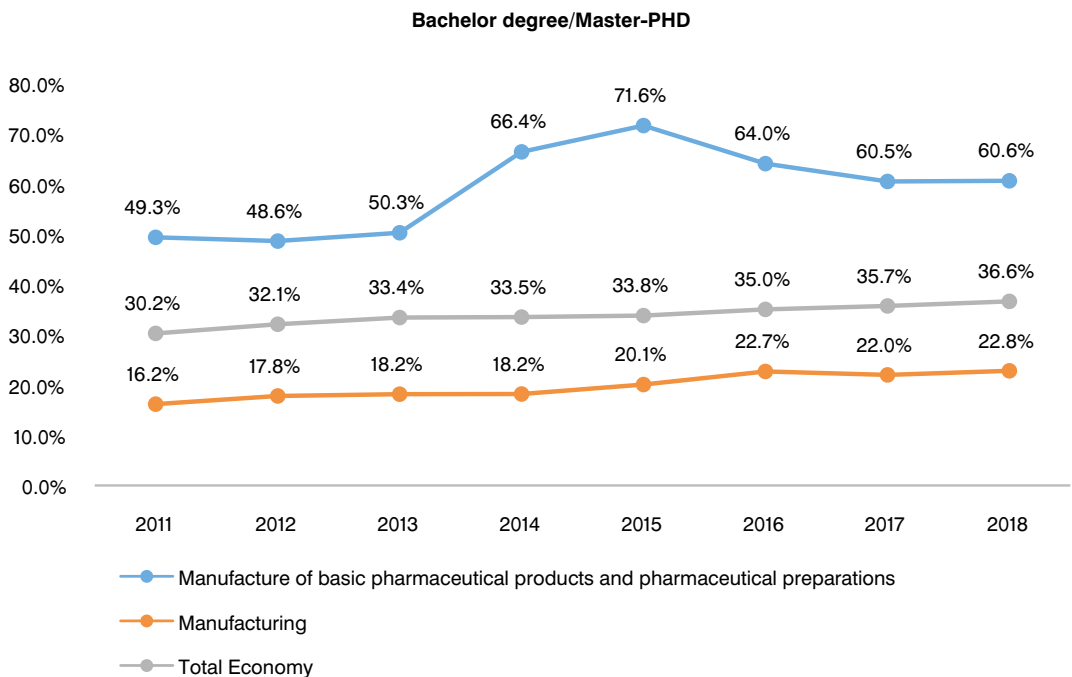


SOURCE: Eurostat, Labour Force Survey, 2019, data processing IOBE

* Employees in the wholesale sector of the wider health sector are not included

At the same time, according to the International Standard Classification of Education (ISCED) for 2018, the educational background of people working in the pharmaceutical industry was very high, with 60.6% of total employees in pharmaceutical production with university education compared to 36.6% in the manufacturing and 22.8%, in the total economy, indicating the high educational training of the employees in the pharmaceutical industry. This difference shows the importance of domestic pharmaceutical production as a preventive sector in the brain drain.

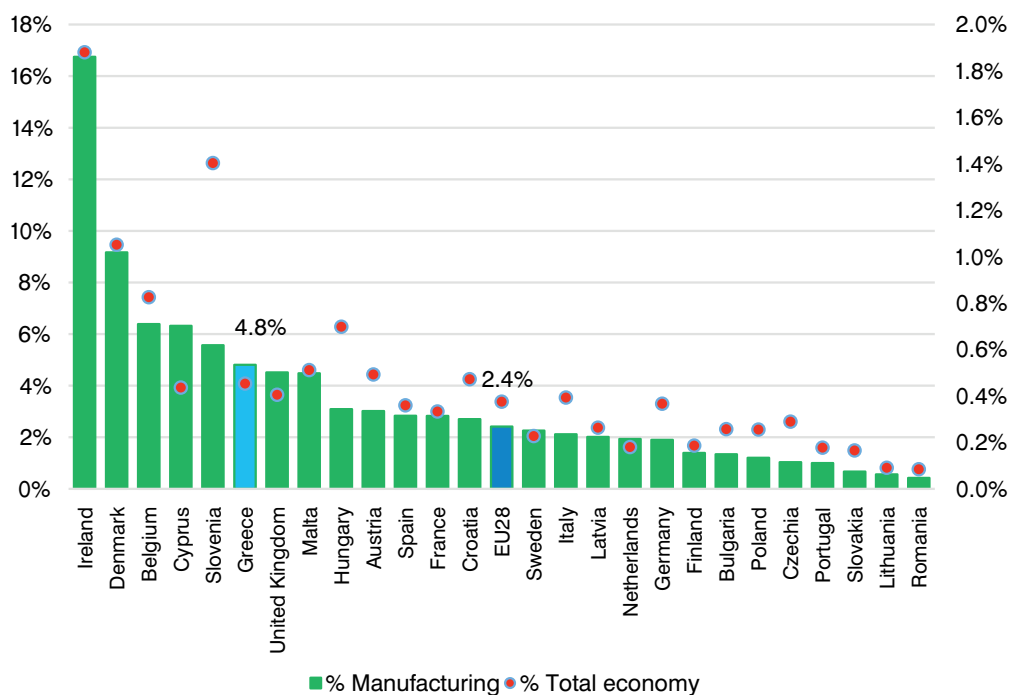
Figure 43: Number of employees with tertiary education in pharmaceutical production (%)



SOURCE: ELSTAT, 2019, Employees Tertiary Education of total employment International Standard Classification of Education (ISCED 2011) data processing IOBE.

In 2018 , employment in the pharmaceutical sector represents 0.4% of total employment of the Greek economy, while this share increases to 4.8% with regards to employment in the manufacturing overall. The share of manufacturing is higher than the respective average in EU28 (2.4%).

Figure 44: Employment in the production of pharmaceutical products (% manufacturing and economy) EU28 (2018)



SOURCE: Eurostat. Labour Force Survey 2019, data processing IOBE.

An important measurement for employed people is the recording time in Full Time Equivalent (FTE), by calculating total employment assuming that all workers are employed full-time. According to the available data, pharmaceutical industry recorded a decline of employment in FTEs by -7.2% during 2010-2017 compared to total manufacturing (-23.2%), indicating that employment in pharmaceutical sector shows inflexibility.

Simultaneously, total wage cost decreased by -12.3% compared to much larger decline in manufacturing (-34.3%). At the same time, the average hourly wage stood at €10.3 for pharmaceutical industry compared to €6.7 in total manufacturing and €5.3 for the total economy.

Table 1: Change in employment and wages 2010-2017

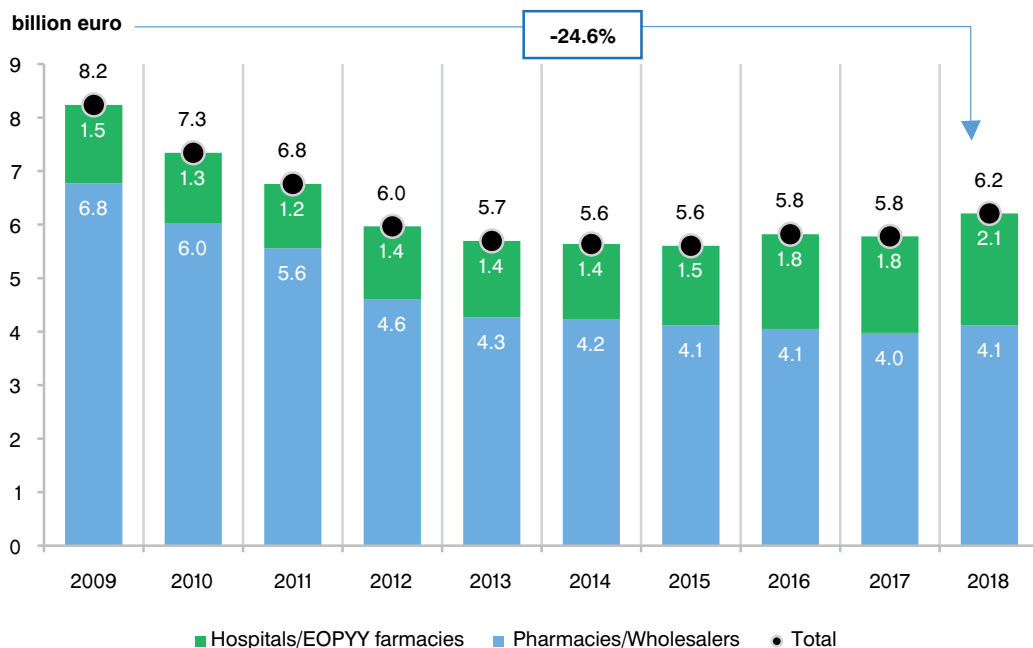
	Employment % change (FTE)	Compensation of employees	Average hourly wage (2017)
Total Economy	-10.8%	-29.7%	5.3 €
Manufacturing	-23.2%	-34.3%	6.7 €
Pharmaceutical production	-7.2%	-12.3%	10.3 €

SOURCE: Eurostat. National Accounts, 2019, data processing IOBE

4.5 SALES

Sales of pharmaceutical products to pharmacies & wholesalers (in values) amounted to €4.1 bil. in 2018, showing an increase of +2.5% compared to 2017. Similarly, sales to hospitals & EOPYY pharmacies amounted to €2.1 bil. in 2018 presenting a higher increase of +16.7% compared to previous year. Approximately, 66.1% of total sales supplied to wholesalers and private pharmacies, while the remaining 33.9% to hospitals and EOPYY pharmacies.

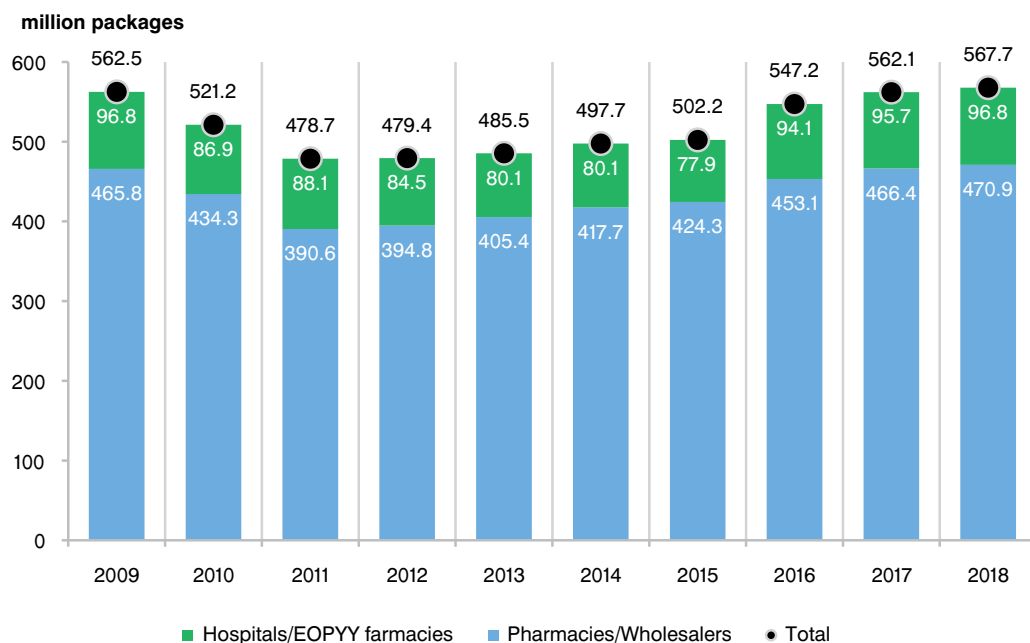
Figure 45: Sales of pharmaceutical products in values (bil. €)-Greece



SOURCE: EOF, 2019 (Pharmacies/Wholesalers at retail prices and Hospitals at hospital prices) Total pharmaceutical sales recorded monthly by the National Organization of Medicines (EOF) and include pharmaceutical sales by pharmaceutical companies to hospitals (at hospital prices) and Wholesalers / Pharmacies (at retail prices). Sales also recorded in terms of number of packages. Parallel exports in 2018 were €363 mil. and are included here.

Regarding the number of packages, an increase of +1.0% was recorded in 2018 compared to 2017 (567.7 mil. packages) with an increase of 1.0% in pharmacies/wholesalers and an increase of 1.2% in hospitals/EOPYY pharmacies was depicted.

Figure 46: Sales of pharmaceutical products in volume (mil. packages) - Greece

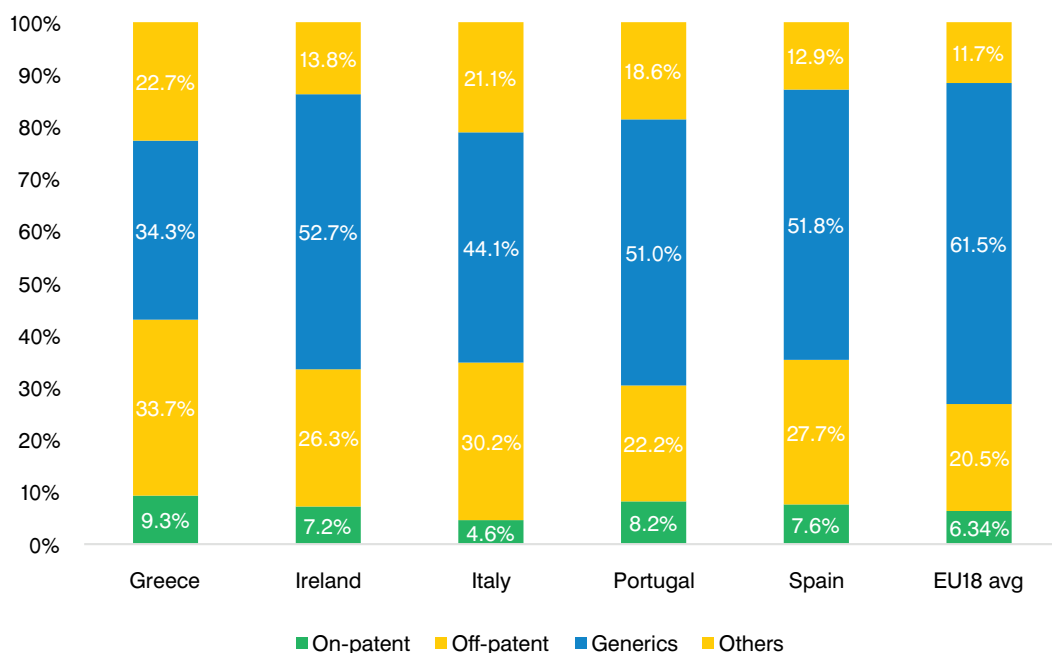


SOURCE: EOF, 2019 *Possible smaller packaging replacements

Pharmaceutical products can be classified according to their patent protection status. According to IQVIA (MAT08/2019), the penetration rate of patent protected medicinal products (on patent) in terms of volume account for 9.3% of the market, which is higher than the average of EU18 (6.3%) which can be partly justified by their significantly lower prices in Greece compared to EU18 countries (€0.87 per unit on average compared to €1.92)

Respectively, the market share of non-protected pharmaceutical products amounted to 67.9% (off-patent 33.7% & generics 34.3%). It is worth noting that the penetration rate of off-patent is higher than the average of EU18 (20.5%), while penetration rate of generics is much lower than the average of EU18 (61.5%).

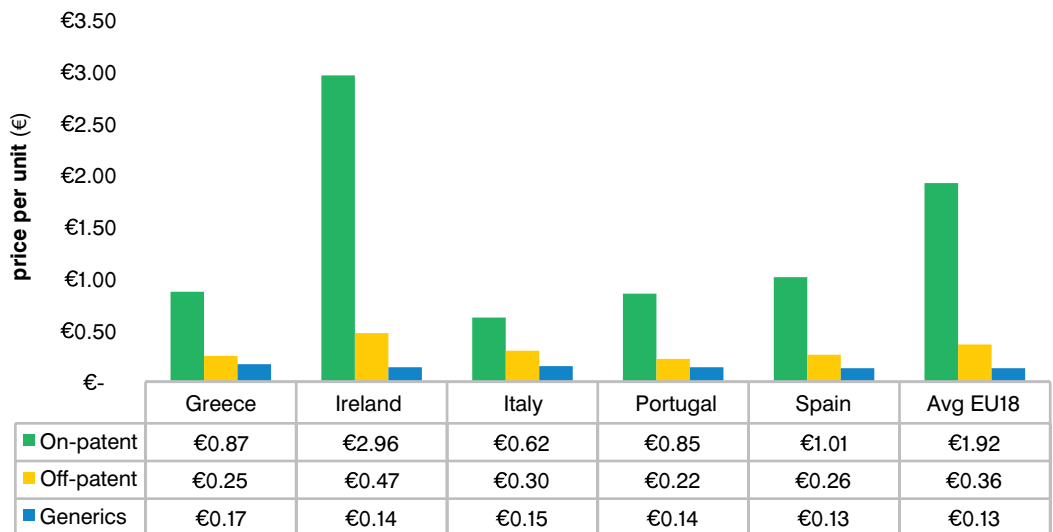
Figure 47: Penetration of pharmaceuticals in EU18, 2019 (in volume) based on patent status



SOURCE: IQVIA, 08/2019 Note1: only retail sales are included for all countries 2 The EU average is made up of available data from 18 countries: Greece, Ireland, Italy, Portugal, Spain, Belgium, France, Germany, Netherlands, UK, Finland, Norway, Sweden, Austria, Czech Republic, Hungary, Poland and Slovakia

According to IQVIA (MAT08/2019), penetration rate in volume for off patent and generic products is partly justified by significantly lower prices for off patent products in Greece compared to the average of EU18 (€0.24 per unit compared to €0.31) and by slightly higher prices for generic products in Greece compared to the average of EU18 (€0.17 per unit compared to €0.13).

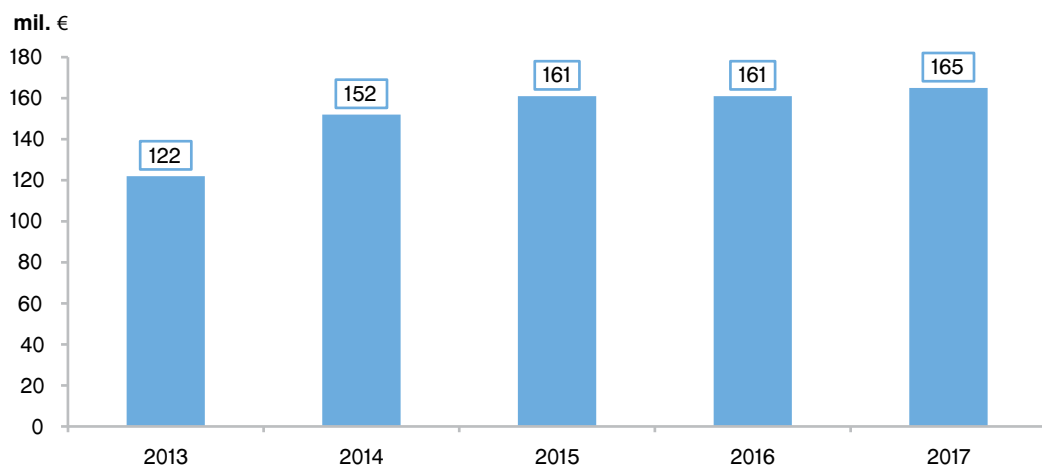
Figure 48: Pricing of pharmaceuticals in EU18, 2019 (price per unit. €) based on patent status



SOURCE: IQVIA, 08/2019 Note1: only retail sales are included for all countries 2 The EU average is made up of available data from 18 countries: Greece, Ireland, Italy, Portugal, Spain, Belgium, France, Germany, Netherlands, UK, Finland, Norway, Sweden, Austria, Czech Republic, Hungary, Poland and Slovakia

The market of OTC followed an upward trend from 2013 onwards from €122 mil. in 2013 to €165 mil. in 2017, an increase of 35.2%.

Figure 49: OTC sales in value 2013-2017 (mil. €)



SOURCE: AESGP, 2018 *Note: Depending on the source of information used, there may be deviations over EFEX-AESGP data

The general Distribution Medicines (GEDIFA), a subset of OTC (216 of the total 1.582 OTC), are available outside pharmacies and concern analgesics, antipyretics, antipruritic, topical medications, laxatives (to treat constipation) and mouthwashes. Of the self-medication products, analgesics, cough and cold products, digestive products, dermatological products and vitamins recorded the largest sales.

Table 2: Sales self-medication products (mil. €)

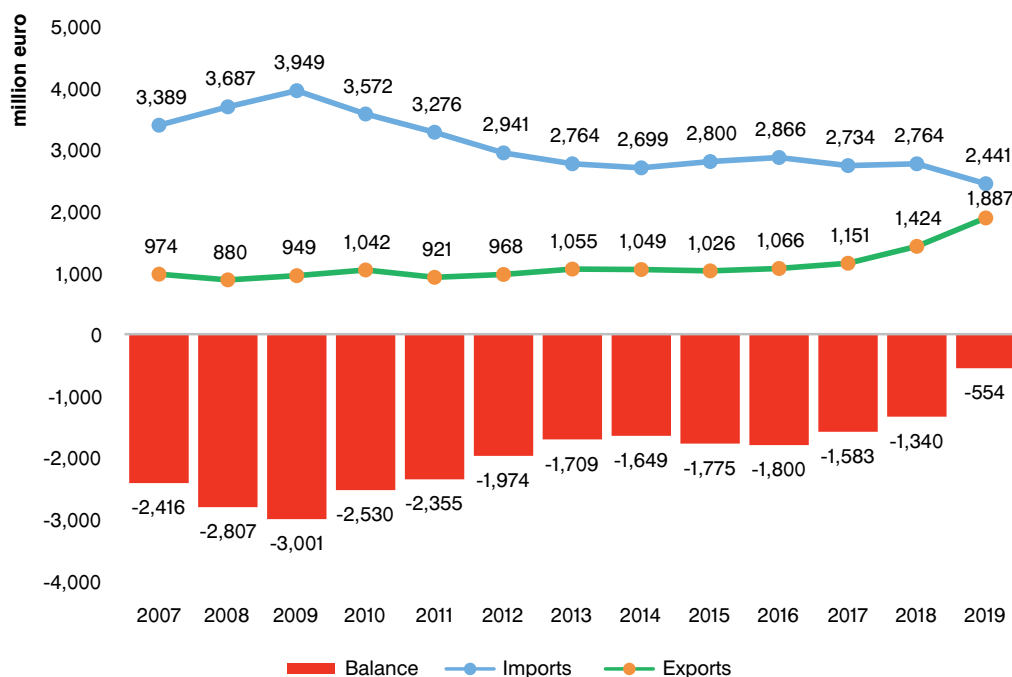
Category	2013	2014	2015	2016	2017	%17/16
Analgesics	60	65	64	65	71	9.2%
Cough & Cold	67	69	66	65	75	13.9%
Digestives & Intestinal	23	24	25	28	32	12.7%
Skin Treatment	33	32	32	32	30	-5.1%
Vitamins & Minerals	62	70	68	67	72	7.2%
Rest categories	81	64	24	83	89	7.7%
Total	323	340	335	339	368	8.4%

SOURCE: AESGP, 2018 *Note: Depending on the source of information used there may be deviations over EFEX-AESGP data

4.6 EXTERNAL TRADE

Imports of pharmaceutical products amounted to €2.4 bil. decreased by 11.7%, and exports amounted to €1.9 bil. in 2019, increased by 32.5%, resulting on a lower deficit compared to 2018, of €554mil.

Figure 50: Evolution of pharmaceutical trade balance (mil. €)



SOURCE: Eurostat International trade. EU Trade Since 1988 By CN8, 2020, data processing IOBE

The exports of pharmaceutical products in relation to the total Greek exports, correspond to 5.6% in 2019, due to their significant increase, compared to 5.1% in 2018. Respectively, imports account for 4.4% of total imports of the country.

Regarding the most important trading partners in the category of pharmaceuticals in 2019, on the side of imports is Germany (28.9%), Italy (10.5%) and France (10.2%), while on the side of exports is France (10.2%), Germany (15.3%) and United Kingdom (9.0%).

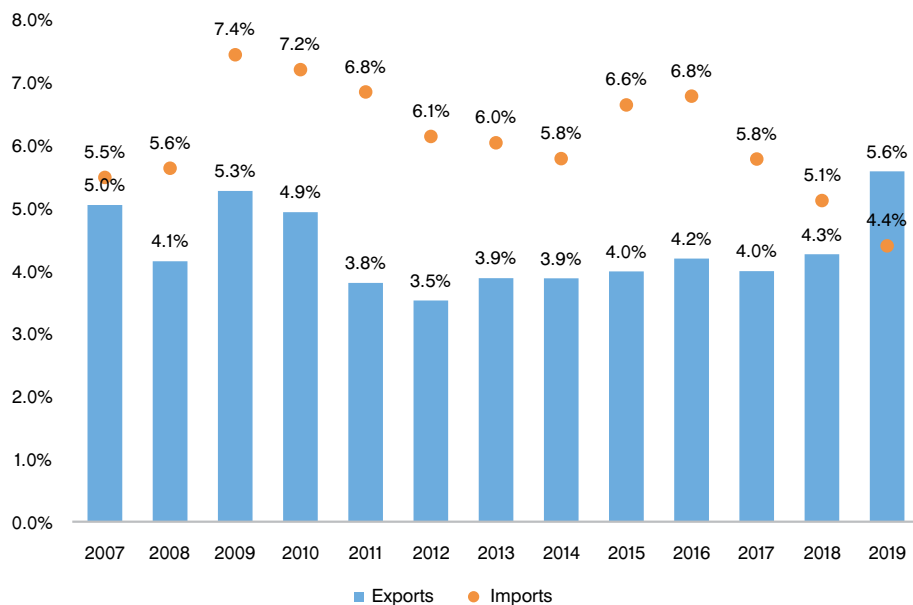
Part of the exports are parallel exports, which are recorded by EOF based on sales declared by pharmaceutical companies.

Table 3: Parallel exports in values 2008-2018

	Value (mil. €)
2008	607,560,542
2009	649,656,941
2010	626,108,697
2011	485,959,647
2012	415,067,547
2013	328,018,383
2014	306,697,909
2015	401,635,357
2016	400,275,317
2017	384,487,265
2018	362,614,492

SOURCE: EOF, 2019

Figure 51: Share of pharmaceutical exports-imports (% of total exports-imports)-Greece



SOURCE: Eurostat International trade, EU Trade Since 1988 By CN8,2020, data processing IOBE

4.7 PRICING OF PHARMACEUTICALS

According to Law 4638/2019 (Gazette 181 A ' / 18.11.2019) and MD 4274 B'/22.11.2019):

Table 4: Pricing system

	Νέο σύστημα τιμολόγησης (ΦΕΚ Α' 181/18.11.2019 & Β' 4274 22.11.2019)
Pricing (on-patent)	<u>First pricing:</u> • Average of 2 lowest different Eurozone prices • The product should be priced in at least 3 EU member states * The same MD about the status of biological, bio-similars, hybrid and biotech medicines <u>Re-pricing:</u> Average of 2 lowest different Eurozone prices. • Increase of the price: no increase for the first pricing • If the price is higher than the average of the 2 lowest Eurozone prices: Price Reduction on each re-pricing up to 7% on the price of the preceding price list with a lower limit of the average of the 2 lowest different price in Eurozone. If with the new price, there is daily treatment cost (DTC). <0.20 € then the price of the product is reduced up to this limit. • Medicines with DTC ≤ 0.20 € are not re-priced
Pricing (off-patent)	<u>First pricing:</u> Average of 2 lowest different Eurozone prices <u>Re-pricing:</u> Average of 2 lowest different Eurozone prices the price in each case cannot be lower than daily treatment cost (DTC) (0.20€) • Increase of the price : no increase for the first re-pricing • If the price is higher than the average of the 2 lowest Eurozone prices: Price Reduction on each re-pricing up to 7% on the price of the preceding price bulletin with a lower limit of the average of the 2 lowest different price in Eurozone. If with the new price, there is daily treatment cost (DTC). <0.20 € then the price of the product is reduced up to this limit. • Medicines with DTC ≤ 0.20 € are not re-priced
Pricing (Generics)	<u>First pricing:</u> 65% of the off-patent <u>Re-pricing:</u> • Increase of the price : no increase for the first re-pricing • If the price is higher than the average of the 2 lowest Eurozone prices or 65% of the off-patent price: Price Reduction on each re-pricing up to 7% on the price of the preceding price bulletin with a lower limit of the average of the 2 lowest different price in Eurozone. If with the new price, there is daily treatment cost (DTC). <0.20 € then the price of the product is reduced up to this limit. • Medicines with DTC ≤ 0.20 € are not re-priced
Re-pricing	1 time every year (December)

PRICE DEFINITIONS

Maximum Wholesaler Price: price at which medicinal products are sold to pharmacies. This price includes the gross profit margin of the wholesaler, which is calculated as a percentage on the maximum ex-factory price (Table 6).

Maximum Retail Price: price at which medicinal products are sold by pharmacies to consumers, and it is defined by the wholesale price, adding the lawful profit margin of the pharmacy as set out in the respective ministerial decree and the applicable Value Added Tax (VAT 6.0%). In particular,: a) 35% on the wholesale price for prescription non-reimbursed medicinal products b) for reimbursed prescription products see Table 6 and for non-prescription products up to 30% (Table 6)

Ex-factory price: price at which medicinal products are sold by the marketing authorization holders (MAHs) to wholesalers and is calculated based on the wholesaler price reduced a) for prescription reimbursed medicinal products by the Social Insurance Funds with price up to 200 € by 4.67% and with a price exceeding € 200,01 by 1,48% b) for prescription medicinal products which are not reimbursed by the Social Insurance Funds by 5.12%,

Maximum Hospital Price: price at which medicinal products are sold by the Marketing Authorization Holders to the State, State hospitals, Social Care Units, EOPYY pharmacies ,public law legal entities referred to in par. 1 of Article 37 of Law 3918/2011, pharmacies of private clinics. The maximum hospital price shall be determined on the basis of the ex-factory price reduced by 8.74%.

Profit margins of wholesalers vary depending on the reimbursement status of each product that is, on whether the product belongs in the positive, negative list or if they fall under L.3816/2011 provisions and its relative wholesaler price. Also, pharmacists profit margins vary according to the wholesaler price of each product. For medicines reimbursed by the social security funds profit margins and the price structure are set as follows:

Table 5: Mark-up in the pharmaceutical supply chain

	Reimbursed Products up to 200€	Reimbursed Products > 200.01€	Negative list products
Wholesalers (over ex-factory)	4.9%	1.5%	5.4%
Pharmacies	(Table 6)	(Table 6)	35%

SOURCE: M.D. (4274/22.11.2019)

Table 6: Percentage of profit (mark-up) pharmacies

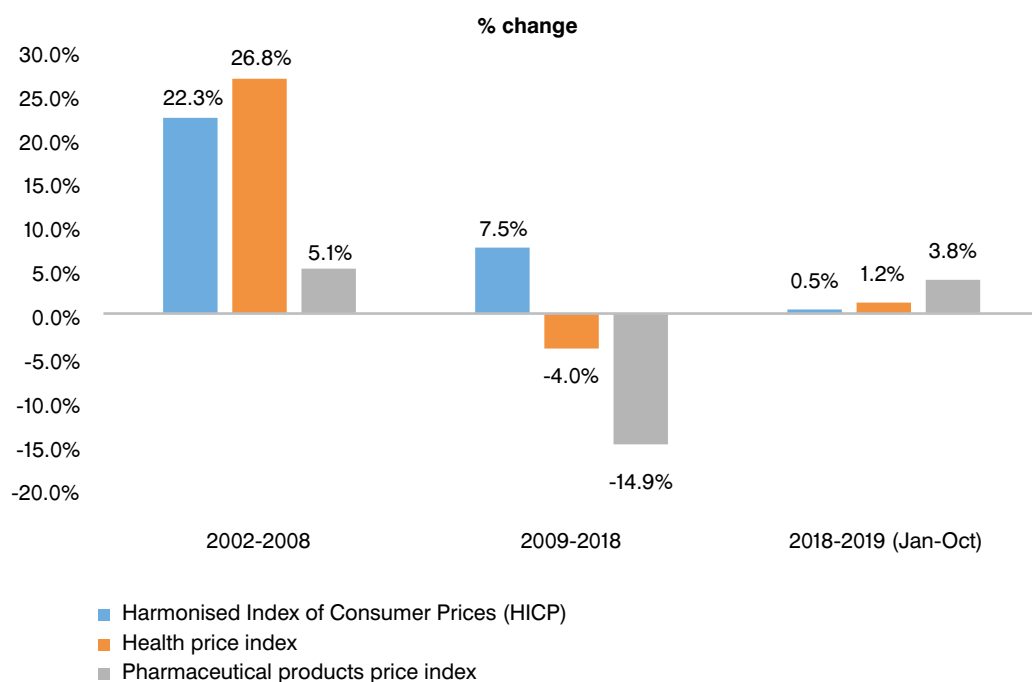
Wholesale price (€)	Percentage mark-up pharmacies
0 - 50	30.00%
50.01 - 100	20.00%
100.01 - 150	16.00%
150.01 - 200	14.00%
200.01 - 300	12.00%
300.01 - 400	10.00%
400.01 - 500	9.00%
500.01 - 600	8.00%
600.01 - 700	7.00%
700.01 - 800	6.50%
800.01 - 900	6.00%
900.01 - 1000	5.50%
1000.01 - 1250	5.00%
1250.01 - 1500	4.25%
1500.01 - 1750	3.75%
1750.01 - 2000	3.25%
2000.01 - 2250	3.00%
2250.01 - 2500	2.75%
2500.01 - 2750	2.50%
2750.01 - 3000	2.25%
> 3000	2.00%

SOURCE: M.D. (4274/22.11.2019)

Additionally, these mark-up margins mentioned above are applied to all reimbursed products sold in private pharmacies including products of L.3816/2010 list. When the latter are directly sold by private pharmacies and the respective cost is not reimbursed by EOPYY or any other SSF, pharmacist margin is set based on the table above.

The period between 2002 and 2008, prices increased by 5.1% presenting the lowest increase between health index (+26.8%) and between categories of goods (22.3%), while between 2009 and 2018 the pharmaceutical price index decline with greater intensity (14.9% reduction). During the 10-month period January-October 2019, prices of pharmaceuticals increased by 3.8%, compared to 1.2% in the health sector.

Figure 52: Annual change (%) of HCIP by category (2015=100)



SOURCE: Eurostat, Harmonised Indices of Consumer Prices (HICP), 2019 data processing IOBE

4.8 HEALTH TECHNOLOGY ASSESSMENT (HTA)

The MAH (Holder of the Marketing Authorization) files an application to the HTA Committee for evaluation of the medicine, accompanied by a full dossier including all information and documentation. The Committee carries out a formal check of the dossier and informs the MAH of any deficiencies. If the dossier is incomplete, the MAH has 60 days to deposit the data otherwise required, the application will be rejected.

After the submission of the full dossier, a rapporteur and external evaluators are appointed who receive the dossier and draw up the relevant assessment reports. It is noted that the HTA Committee may, by unanimous and specifically reasoned decision, not appoint external evaluators or designate only one. The final proposal is then drafted, which is communicated to the members of the Evaluation Committee. Here is the evaluation of the suggestion. If the outcome of the evaluation is positive, the dossier shall be referred to the Negotiation Committee. The Negotiation Committee will hold a meeting with the MAH, assess the financial impact and suggest to the Evaluation Committee the compensation fee.

Then follows the opinion of the Negotiation Committee, which is forwarded to the Evaluation Committee and then to the Minister of Health. The decision of the Minister of Health shall be issued within 180 days of the filing of the application. Following the adoption of the decision of the Minister of Health, a summary of the opinions of the Evaluation Committee, which include at least their rationale, is published on the EOF's web site, after deletion of information regarding commercial confidentiality and personal data.

The Hellenic Association of Pharmaceutical Companies (SFEE) collects and records data related to State's outstanding debts of its member companies (on a voluntary basis). Below an overview of total receipts, sales invoices and debts until 31.12.2019 only for the pharmaceutical industry are presented.

Data for outstanding debts from ESY hospitals, EOPYY, and Military hospitals also constitute the largest part of health expenditure.

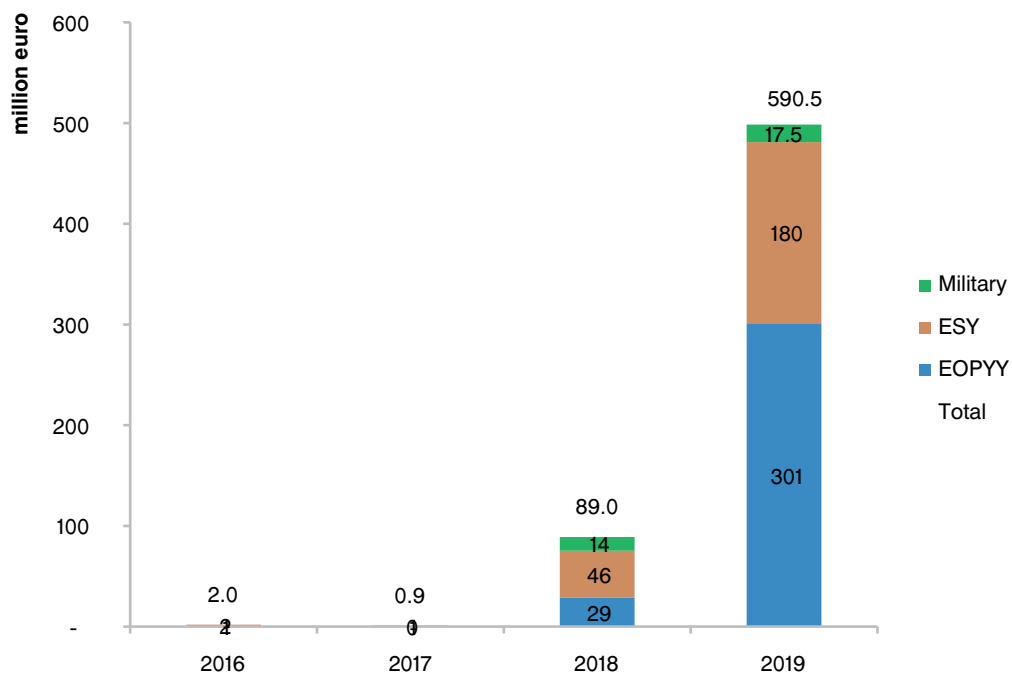
Specifically, findings show that:

The amount of government outstanding debts to SFEE member companies until 31.12.2019 for 2016 and 2017 amounted to €2.0 bil. and €0.9 mil. respectively. For 2018 the amount of government debts to SFEE member companies until 31.12.2019 amounted to €89.0 mil. of which 32% concerns EOPYY and 52% ESY (the remaining 15% military hospitals), while for 2019 the amount of debts amounts to €590.6 mil., of which 51% concerns EOPYY and 30% ESY (the remaining 3% military hospitals).

More generally, there is a relatively stable repayment of the outstanding debts of the State to pharmaceutical companies. As, pharmaceutical companies are significantly six months behind in settling state debts both standalone and comparative to other providers, a stable repayment policy must be established directly so as to avoid inability of pharmaceutical companies to support both the market and their businesses.

State's outstanding debts towards pharmaceutical companies

Figure 53: State debts evolution towards SfEE member companies' until per year (€ mil.)



SOURCE: SFEE

6.1 SYSTEM OF HEALTH ACCOUNTS (SHA)

In 2012, the Hellenic Statistical Authority (ELSTAT.) in collaboration with the Center for Health Services Management and Evaluation of the Nursing Department of the University of Athens and Dr. Markus Schneider (BASYS, Germany) published for the first time statistics on National Health Expenditures (both public and private) based on the System of Health Accounts (SHA) of the Organization for Economic Cooperation and Development (OECD). The Hellenic Statistical Authority (ELSTAT.) publishes every year statistical data for the Funding on Health Expenditures at national level based on the new System of Health Accounts manual SHA 2011 of the OECD, against SHA 1.0 that used for earlier data. Based on article 6 of the European Regulation (EU) 1338/2008 of the European parliament re matters of public health and the respective under voting Implementation Regulation and in cooperation from OECD & WHO the new compilation of SHA data was created. As such, ELSTAT was obliged to communicate SHA data to Eurostat and to International Organizations (OECD and World Health Organization) according to the new SHA 2011.

Transition table from SHA 1.0 to SHA 2011 codes

System of Health Accounts SHA 1.0	Funding Sectors (HF)	System of Health Accounts SHA 2011
HF.1.1	General Government (excl. Social Security Funds)	HF.1.1
HF.1.2	Social Security Funds (SSFs)	HF.1.2
HF.2.2	Private Voluntary Insurance Schemes	HF.2.1
HF.2.3	Private Households Out-of -pocket Expenditures	HF.3.1
HF.2.4	Non Profit Institutions Financing Schemes	HF.2.2
HF.2.5	Corporation Financing Schemes	HF.2.3
HF.3	Rest of the World	HF.4
HF.0	n.e.c	HF.0

System of Health Accounts SHA 1.0	Health care providers (HP)	System of Health Accounts SHA 2011
HP.1	Hospitals (public and private)	HP.1
HP.2	Residential. Long-term care facilities	HP.2
HP.3.1-3.4, HP.3.6	Providers of ambulatory health care	HP.3
HP.3.5, HP.3.9	Providers of ancillary services	HP.4
HP.4	Retailers and other providers of medical goods	HP.5
HP.5	Providers of preventive care	HP.6
HP.6	Providers of health care system administration and financing	HP.7
HP.7	Rest of Economy	HP.8
HP.9	Rest of the World	HP.9
HP.0	n.e.c	HP.0

The SHA is organised around a tri-axial system for the recording of health expenditure, defining:

- health care by function (HC)
- health care service provider industries (HP) and
- health care financing agencies (HF)

More specifically, on the basis of the aforementioned system (SHA 2011), for each expenditure category the following items are depicted:

- The funding agency - e.g. the Ministries (HF 1.1.), Social Security Funds (HF1.2), Households (HF 3.1). etc.
- The health care provider to which this expenditure is directed- e.g. General Hospitals (HP 1.1), Offices of physicians (HP 3.1), Offices of dentists (HP 3.2), etc.
- The health care function pertaining to each expenditure- e.g. Inpatient curative care (HC 1.1), Outpatient curative care (HC 1.3), etc.

The SHA 2011 has been adopted by most of OECD countries since all Member States of the EU are obliged to implement this system (pursuant to Community legislation) in order to transmit economic data for health care (from 2003 onwards) to OECD, Eurostat and WHO, through a common questionnaire jointly developed by the above three Organizations.

The SHA (for Greece) was developed in line with the “bottom-up” approach and following the funding agencies perspective. Health expenditure data were transmitted by the relevant Ministries (the Ministry of Health and Social Solidarity, the Ministry of Finance, the Ministry of National Defense, the Ministry of Culture, Education & Religious Affairs and the Ministry of Interior & Administrative Reconstruction), by the Social Security Funds (SSFs), by the Hellenic Association of Insurance Companies (EAEE), by Individual Non-Governmental Organizations, by the Church of Greece, by the Household Budget Survey (HBS) conducted by ELSTAT. and the Managing Authority of the Ministry of Health.

Health expenditure, according to the new SHA methodology 2011 is comprised by the respective expenditure for:

- **Care Services. Rehabilitation**

- HC.1 Hospitals (public and private)
- HC.2 Residential, Long-term care facilities
- HC.3 Providers of ambulatory health care

- **Ancillary Health Care Services**

- HC.4 Providers of ancillary services (e.g. clinical diagnostic imaging and laboratory services, patient transport and emergency rescue services)

- **Products Supply for Outpatient Patients**

○ HC.5 Retailers and other providers of medical goods (pharmaceuticals, vision glasses, hearing aids, orthopedic belts and accessories)

- **Other Medical Products. Healthcare Management etc.**

- HC.6 Preventive Care Services & Public Health
- HC.7 Healthcare Management & Social Security Funds
- HC.9 Non-specialized services by type

Funding of Health Expenditure: is defined as the Funding on Consumption Expenditure of resident units on health care goods and services. irrespective of where that consumption takes place (i.e. in the economic territory of the country or abroad), and irrespective of the funding agency (which may be in the economic territory of the country or abroad). Therefore. imports of health care goods and services must be included. while exports must be excluded.

Public or Private Funding of Expenditure is defined on the basis of the type (public or private) of the funding agency and on the basis of the type (public or private) of the Health Care Provider. For example, public funding of expenditure on hospitals does not mean the total expenditure of the public hospitals but the total amount of funding that both the public and the private hospitals get by the public funding agencies (Ministries. Social Security Funds).

- **Inpatient curative care services HC.1.1**

Under this category are included activities relating to inpatient services in either public, private, psychiatric and special treatment hospitals.

- **Day cases of curative care HC.1.2**

Under this category are classified all expenses relating to blood dialysis that are covered by any Social Security Fund (SSF).

- **Outpatient curative care HC.1.3**

This category reflects medical and paramedical examination for patients from outside the hospital. Moreover, services such as mobile care units. private clinics and diagnostic centers are also included under this category.

- **Pharmaceutical and other medical non-durables HC.5.1**

This category includes various pharmaceutical products such as medicines. sera. vaccines. bandages etc.

- **Therapeutic appliances and other medical durables HC.5.2**

This category includes medical supplies such as eyeglasses, hearing aids, orthopedic devices etc.

6.2 PHARMACEUTICAL EXPENDITURE-SALES

Data on “pharmaceutical expenditure” are often confused with data on “total pharmaceutical sales” released by the National Organization for Medicines (EOF).

EOF records sales of medicinal products from pharmaceutical companies to hospitals, wholesalers and pharmacies, on a monthly basis. On the other hand, according to the OECD’s International Classification of Health Accounts, with which Greek statistics have been harmonized, pharmaceutical spending is the total expenditure for medicinal products prescribed for outpatient care (non-hospital treatment). Therefore, **pharmaceutical expenditure is only a fraction of total pharmaceutical sales.**

More precisely, pharmaceutical sales are composed of:

- A)** Public pharmaceutical expenditure which is incurred by social insurance funds (partially returned to public funds, as VAT of 6% and mandatory discounts/ rebates/ clawback from pharmacists and pharmaceutical companies are included);
- B)** Hospital sales from pharmaceutical products (invoiced at hospital price = ex-factory price minus 8.74% - rebates);
- C)** Sales of pharmaceutical products that are re-exported (parallel exports);
- D)** Sales of pharmaceutical products to citizens at their own cost (OTC and negative list);
- E)** Patient’s copayment.

Regarding point (b), it should be noted that pharmaceutical sales to hospitals are included in hospital expenditure, so should be excluded from the analysis to avoid double-counting.

Regarding points (c) and (d), it should be noted that these sales are not part of public pharmaceutical expenditure; on the contrary, revenue to the government is generated, in the form of VAT, income tax, payroll tax, social security contributions, etc.



HELLENIC ASSOCIATION OF
PHARMACEUTICAL COMPANIES

280, Kifissias Ave. & 3, Agriniou str., 152 32 Halandri, Athens, Greece
sfee@sfee.gr, www.sfee.gr