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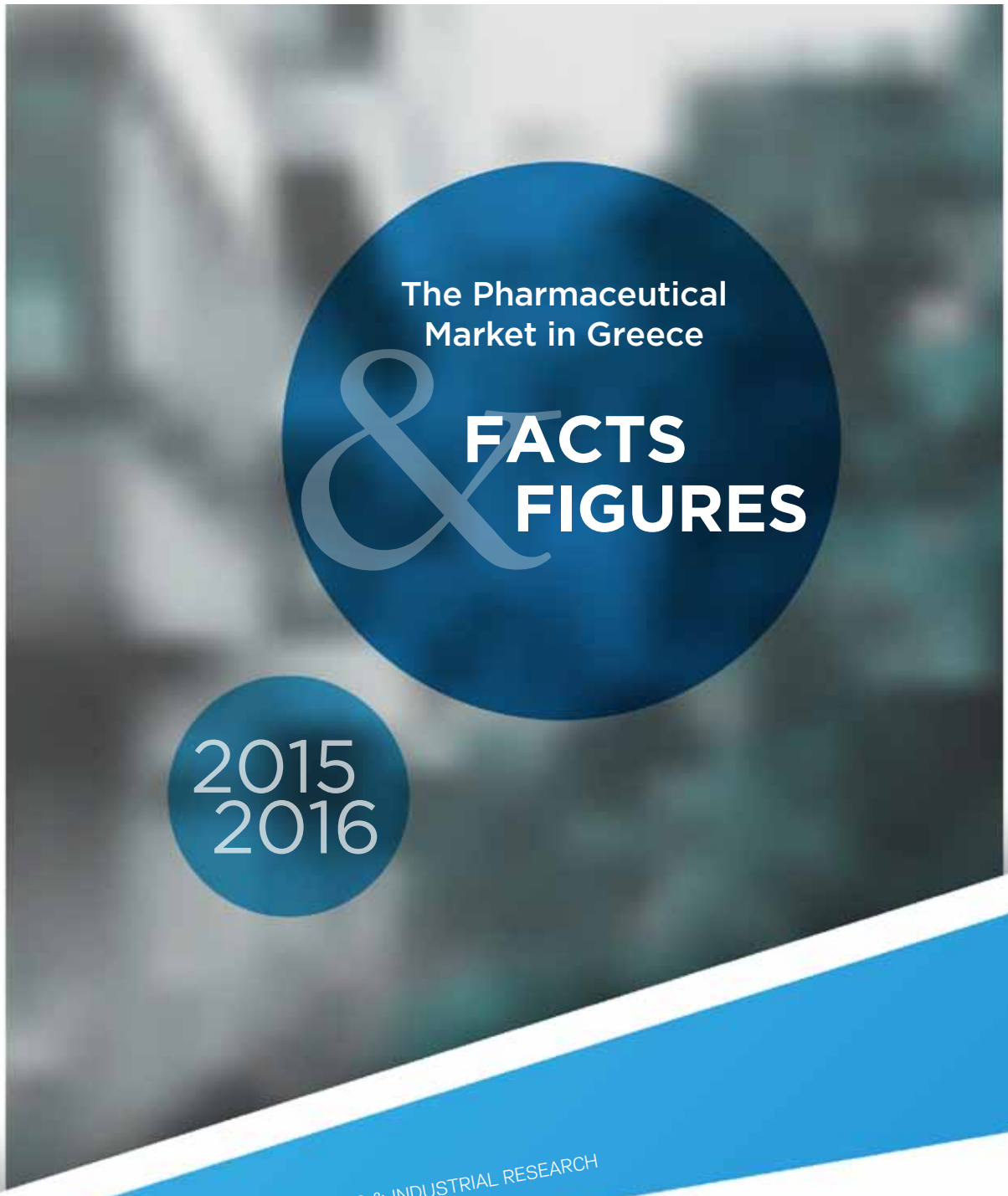

The Pharmaceutical Market in Greece & FACTS FIGURES

2015 2016

FOUNDATION FOR ECONOMIC & INDUSTRIAL RESEARCH

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HELLENIC ASSOCIATION OF PHARMACEUTICAL COMPANIES

The Pharmaceutical Market in Greece

FACTS & FIGURES

2015 - 2016

FOUNDATION FOR ECONOMIC & INDUSTRIAL RESEARCH

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FOREWORD - ACKNOWLEDGMENTS

"The Pharmaceutical Market in Greece: Facts & Figures 2015-2016"

It is with great pleasure to introduce the renewed annual edition **'The Pharmaceutical Market in Greece: Facts & Figures 2015-2016'**, conducted by SfEE's Data Monitoring Committee in collaboration with the Health Economics Observatory of IOBE.

As already established over the past years from our association, this report represents today **the most comprehensive overview of key facts and data of the pharmaceutical market in Greece** and the overall economic environment within which we operate, with the aim to inform both our members and interested stakeholders of the broader health sector.

More specifically, this year's edition covers trends regarding the evolution of public and private healthcare expenditure, the shaping of the overall pharmaceutical market, including OTC, and a brief summary of key macroeconomic data that affect the entrepreneurship of the pharmaceutical industry.

This edition includes all updated data from the period 2015-2016, where published by the time of this publication, so as to provide the most updated picture of the market and the main changes that occurred until the end of past year.

As most of the health sector stakeholders aim for evidence-based decision making so as to underline and promote the value proposition and not only the cost aspect of pharmaceuticals, we hope this summary to help them constructively in this direction.

We would like to thank the IOBE research staff and the members of Data Monitoring Committee that help this publication to conclude.

For the Data Monitoring Committee

Konstantinos Kofinas
General Secretary

For SFEE

Pascal Apostolides
President

The report **"The Pharmaceutical Market in Greece: Facts & Figures 2015-2016"** was composed and reviewed by the research staff of the Health Economics Observatory at 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

- **Dorina Theodoratou**
  SfEE, Health Economics & Market Access Officer as coordinator of Data Monitoring Committee
- **Zefi Vostitsanou**
  SfEE Scientific & Corporate Affairs Director
- **Konstantinos Kofinas**
  Chairman of the of SfEE Data Monitoring Committee, Chairman & Managing Director, Merck, Greece & Cyprus

2 EXECUTIVE SUMMARY

During 2015, Greece experienced many political challenges (two elections and a referendum) that resulted in severe economic instability and the introduction of capital controls.The Greek economy returned to recession in 2015, however with a slight decrease of -0.2% in GDP since it was already low. All the above, increased the uncertainties on the wider economic activity and weakened any growth prospects from the previous year. On the price side, intense deflation slightly decompressed in 2015 and stood at -1.1% compared to -1.4% the previous year.

With respect to demographics, the negative trend in the natural change of the population (difference between births and deaths) at -29.715 persons for 2015 is expected to continue steadily for the next decades, resulting in an overall reduction of the Greek population until 2080, while significantly changing its age-group composition. In particular, it is expected that people aged over 65 years will almost account for 1/2 of the total population (46.6%) in 2050, thus deteriorating the dependency ratio and resulting in even greater pressure on the social security system.

Based on the latest available data, health expenditure in Greece reached €14.4 bil. in 2015 (8.2% of GDP), out of which €8.7 bil. (5% of GDP) accounted for public health expenditure. In 2014, inpatient expenditure amounted to € 6.0 bil., followed by pharmaceutical expenditure €4.2 bil. and out-patient expenditure (€ 2.9 bil.).

Public pharmaceutical expenditure followed a downward trend for fifth consecutive year, as the target in 2016 was reduced at €1.945 bil. from €2 bil. the previous year, resulting in an overall decrease of -61.9% during the period 2009-2016.

As expected, a similar trend was observed in the public pharmaceutical expenditure per capita, as it has been reduced from €460 in 2009 to €184 in 2016 ranking Greece in the bottom among other EU countries. At this point, it should be noted that the fiscal measures taken by the Greek government were proven insufficient as demonstrated by the great contribution of the industry, through the mechanisms of rebates and clawback, in order to cover Greek patients' needs.

Specifically in 2015, the pharmaceutical industry paid back €300 mil. in rebates and €319 mil. in clawback thus contributing with 23.6% of the actual pharmaceutical expenditure, while in 2016 it is estimated that the respective numbers will reach €304 mil. in rebates and €430 mil. in clawback (~27.5% of the actual pharmaceutical expenditure).

Hospital pharmaceutical expenditure in 2015 amounted to €1.4 bil. demonstrating a decline of -31.5% compared to 2012 with the greatest reduction in pharmaceutical expenditure (-35.8%). In this compressed hospital pharmaceutical expenditure clawback is implemented in 2016, thus the industry had to pay back another €139 mil. since the hospital budget was insufficient (€570 mil.) to cover the demand in hospital/EOPYY pharmacies (according to available data for the first half of 2016).

Total sales of pharmaceutical products in terms of value to wholesalers/pharmacies amounted to €4.1 bil. in 2015 indicating a fall by -2.7% compared to 2014, whereas sales to hospitals/EOPYY pharmacies amounted to €1.5 bil. demonstrating an increase of 5.7%. On the contrary, in terms of volume (number of packages sold) sales to hospitals/EOPYY pharmacies presented a decrease of -2.6%, whereas sales to wholesalers/pharmacies increased at 1.6%.

According to latest IMS data, penetration rate of patent protected medicinal products in terms of volume reached 10.5% (2016), relatively higher than the EU average (6.8%), which can be explained by the significantly lower prices in Greece compared to other European countries. Respectively, the share of non-protected medicinal products amounted to 65.9% in 2016 (off patent 33.5% and generics 32.4%) higher than the previous years. According to EFEX, over the counter medicinal products (OTC) market size amounted to €172.2 mil. in 2015, showing an increasing trend compared to previous years, which is in line with the increased self-medication of patients prevailing this period.

Production of pharmaceutical products in Greece was estimated at €929 mil. in terms of value (ex-factory price) in 2015, decreased by -1.2% compared to previous year. Overall, when compared to other national manufacturing sectors (24 in total), pharmaceutical industry ranks 8th, showing a steady contribution in the domestic industrial production of the country.

Employment in the manufacturing of pharmaceutical products in Greece was estimated at 13.1 thousand people in 2015, showing a decrease of -1.5% compared to 2014. In total, the workforce in the pharmaceutical industry represents the 0.4% of total employment in the Greek economy and 4% of the respective labor force of the industrial sector, which is higher than the average of EE28 (2.5%).

Lastly, imports and exports of medicinal products in 2015 amounted to €2.8 bil. and €1.0 bil., respectively. Compared to last year, imports increased by 3.7% while exports decreased by -2.3%, thus increasing the pharmaceutical trade deficit at 7.6% or in absolute numbers -€1.8 bil. compared to - €1.7 bil. in 2014.

3 KEY STATISTICS OF GREEK PHARMACEUTICAL MARKET

Table 1: The Greek pharmaceutical market in figures

Number of companies	Manufacturers and Importers (SFEE & PEF members) (2016) Wholesalers (2015) Pharmacists Associations (2015)	~106 100 26	EL.STAT, EOPYY, Panhellenic Association of Pharmaceutical Wholesalers
Production	Domestic Production at ex-factory prices (2015) % change 2014/2015 Value added (2015) Share of value added/Total of manufacturing (2015)	€929 mil. -1.2% €687 mil. 3.9%	Eurostat 2016, PRODCOM
Employment of pharmaceutical production	Number of employees (production) (2015) Number of employees (production) (2014) % change 2014/2015 Share of employment in production/total of manufacturing (2015)	13.1 thous. 13.3 thous. -1.5% 4.0%	Eurostat, Labour Force Survey, & PAPW 2016
External trade	Exports Value (2015) % change 2014/2015 Imports Value (2015) % change 2014/2015	€1,025 mil. -2.3% €2,800 mil. +3.8%	Eurostat, International trade, EU Trade Since 1988 By CN8, 2016
Parallel Exports	Value terms (2015) % change 2014/2015	€401.6 mil. +30.9%	EOF, 2016
Pharmaceutical Sales	To wholesalers / pharmacies (at retail prices) (2015) % change sales pharmacies/wholesalers 2014/2015 To hospital (at hospital prices) (2015) % change sales hospitals 2014/2015	€4,119 mil. -2.7% €1,484 mil. +5.7%	EOF, 2016
Public Pharmaceutical Expenditure	Expenditure 2009 Expenditure 2015 Clawback 2015 Rebate 2015 Clawback 2016* Rebate 2016* Change public pharmaceutical expenditure 2009/2016 Per capita public pharmaceutical expenditure (2015) * Per capita public pharmaceutical expenditure (2016) * Public Pharmaceutical Expenditure / Sales of medicinal products (2015)	€5,108 mil. €2,000 mil. €319 mil. €300 mil. €432 mil. * €304 mil. * -61.9% €184 €180 35.7%	System of Health Accounts (SHA) 2014, EOPYY 2012-2016, State Budget 2016, ΜΔ Γ5/63587 ΦΕΚ 1803/2015, data processing IOBE, SFEE, OECD Health Data 2016, Eurostat 2016
Public Health Expenditure	Greece (value) (2015) Greece (% of GDP) (2015) European Union (% of GDP) (2015)	€8,876 mil. 5.0% 7.8%	SHA, 2014
Price Structure	Ratio of ex-factory price to retail price	69.9%	M.D 3890/B/2.12.2016 estimations IOBE & EFPIA 2014
Demographic data	Life expectancy (2014) Dependency ratio (% population 0-14 years & 65+/ 15-64 years) (2014) % of Uninsured (2014)	81.5 years 52.8% 25.2%	OECD Health Data 2016, Ministry of Labour, Atlas, 2014
Price Change	Medicines Price Index 2009/2015	-15.0%	Eurostat, Harmonised Indices of Consumer Prices (HICP), 2016
Generics	% of total sales (generics in value terms) % of total sales in volume terms (generics) % of total sales in volume terms (generics & off-patents)	-22.2% -31.5% 65.4%	IMS 2016, MIDAS
OTC	Value (2015) change %	€172.2 mil. -48%	AESGP, EFEX 2016
R&D expenditure	Estimations (2015)	€100 mil.	EOF, 2016

4 ECONOMIC ENVIRONMENT

4.1 MACROECONOMIC INDICATORS

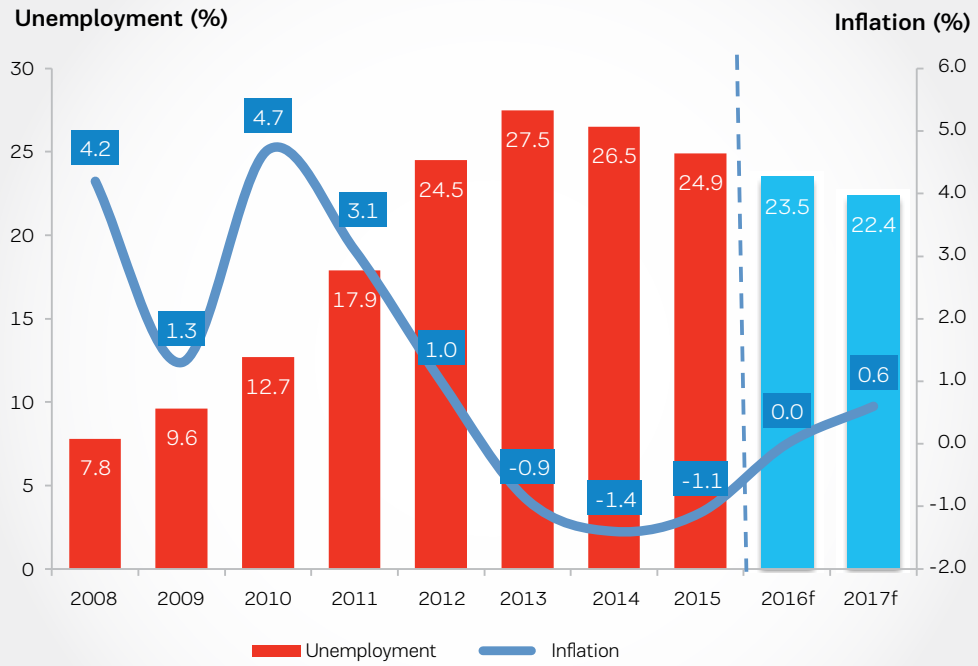
The Greek economy returned to recession in 2015, with a slight decrease of -0.2% in GDP (Figure 1), confirming that the recovery in 2014 was fragile due to high uncertainty both for internal and external factors. So in 2015, the triple elections (two national elections and the referendum) and the introduction of capital controls in July 2015, weakened the wider economic activity, thus any growth prospects, while investment registered a decline during negotiations with EU partners. Falling interest rates at European level due to the quantitative easing program, were not transferred to the Greek economy in 2015, with bank lending being limited and relatively expensive. For 2016 recession is expected at -0.3%, while in 2017 growth is expected at 2.7%, according to European Commission forecasts, while the latest available EL.STAT. data. (Provisional Data 6/3/2017) report stagnation throughout 2016.

Figure 1: GDP (% change)

SOURCE: Eurostat, 2016, European Commission, Autumn 2016 Economic Forecast, GDP Chain linked volumes 2010, Revised data 2011-2014, Provisions 2016-2017 Draft State Budget 2017

On the side of values, the intense deflation slightly decompressed in 2015 and stood at -1.1% from -1.4% in 2014, while deceleration was recorded in the unemployment rate at 24.9%, clearly milder compared to historical high rate of 2013 (27.5%). The harmonized inflation is expected at 0.0% in 2016, after 3 years of deflation, while for 2017 is expected close to 0.6%.

Figure 2: Unemployment and Inflation (%)

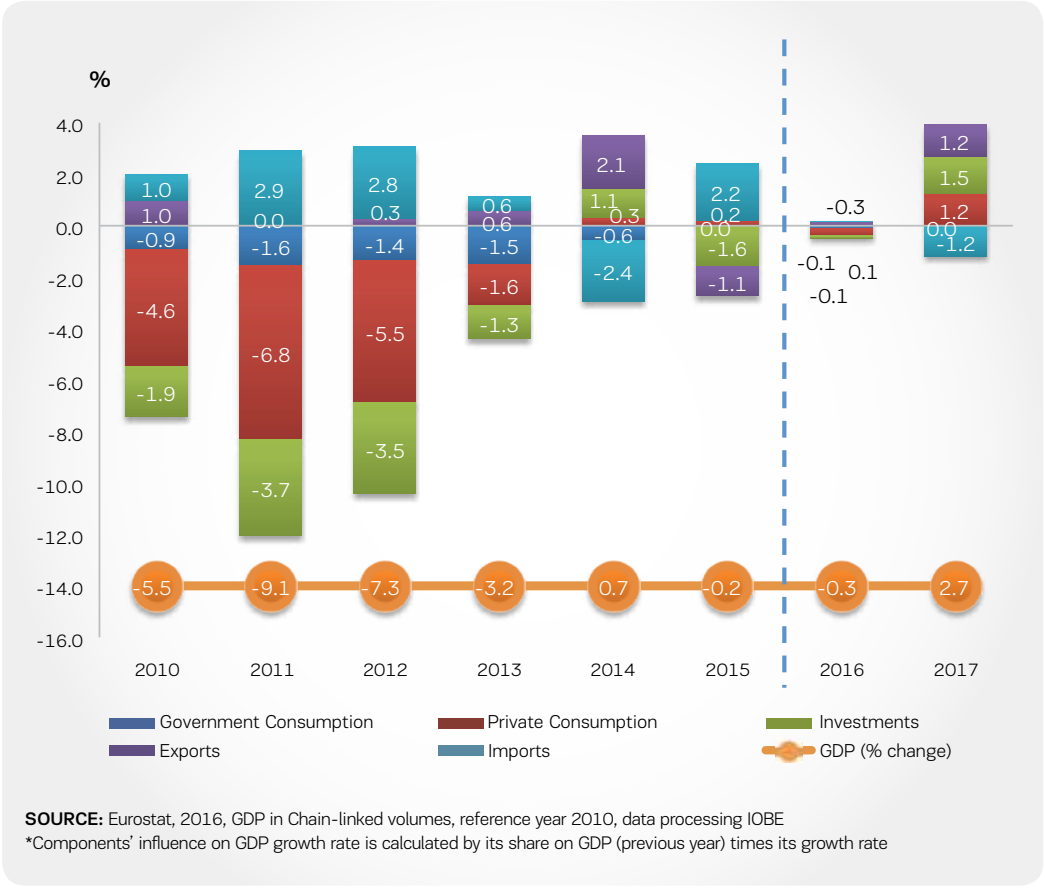


SOURCE: Eurostat, 2016, Provisions 2016-2017 Draft State Budget 2017

Consumption over time is mainly influenced by changes in income, and comprises the largest part of GDP (Figure 3). However, its contribution remains close to 70%, since the other components (investments (-0.1%) and exports) did not record the expected increase.

Estimates for 2016 show marginal changes in all components of GDP, resulting in a weak growth rate of -0.3%, while for 2017 significant strengthening of private consumption, investment and exports is expected, which is only partially offset by strengthening of imports, with the final rate of GDP estimated at 2.7%.

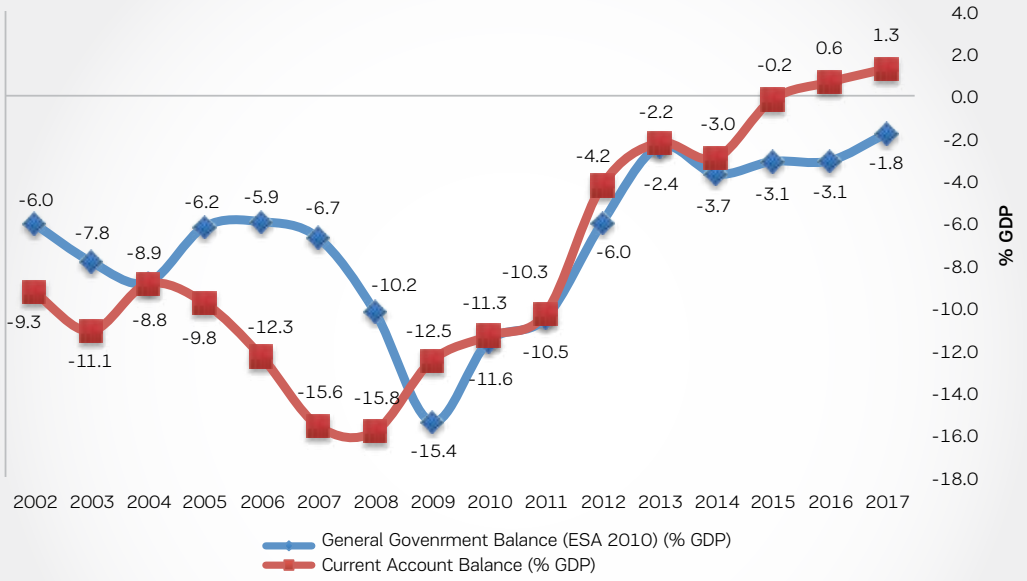
Figure 3: Components of GDP (%)



SOURCE: Eurostat, 2016, GDP in Chain-linked volumes, reference year 2010, data processing IOBE
*Components' influence on GDP growth rate is calculated by its share on GDP (previous year) times its growth rate

Overall the Greek economy, following the significant decline in 2008-2013 and despite the positive signs in 2014, did not confirm a definitive turn in recovery. However, it should be noted that internal and external imbalances, that posed barriers to a healthier system for growth, have been eliminated. Thus, budget deficits and current account (twin deficits) (Figure 4)[1] have somehow balanced out, so the economy could move forward to a new production model in a constantly changing economic environment globally, without incurring significant weaknesses of the past.

Figure 4: General Government Balance & Current Account Balance (% GDP)



SOURCE: AMECO, 2016, GDP in Chain-linked volumes, reference year 2010, data processing IOBE
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. 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 (Labor, Entrepreneurship) and Secondary Income (Current Transfers).

5 DEMOGRAPHIC TRENDS AND HEALTH PROFILE OF THE NATIONAL POPULATION

5.1 DEMOGRAPHIC TRENDS

The number of births in Greece amounted to 91,877 persons in 2015 recording a -0.3% drop from previous year, while the number of deaths recorded an increase of 6.9% amounting to 121,592 persons compared to 113,740 persons the previous year. As such, the natural population change (difference of births - deaths, excluding migration) was negatively affected, resulting in an overall reduction of -29,715 people in the national population.

Table 2: Births-Deaths 1931 – 2015

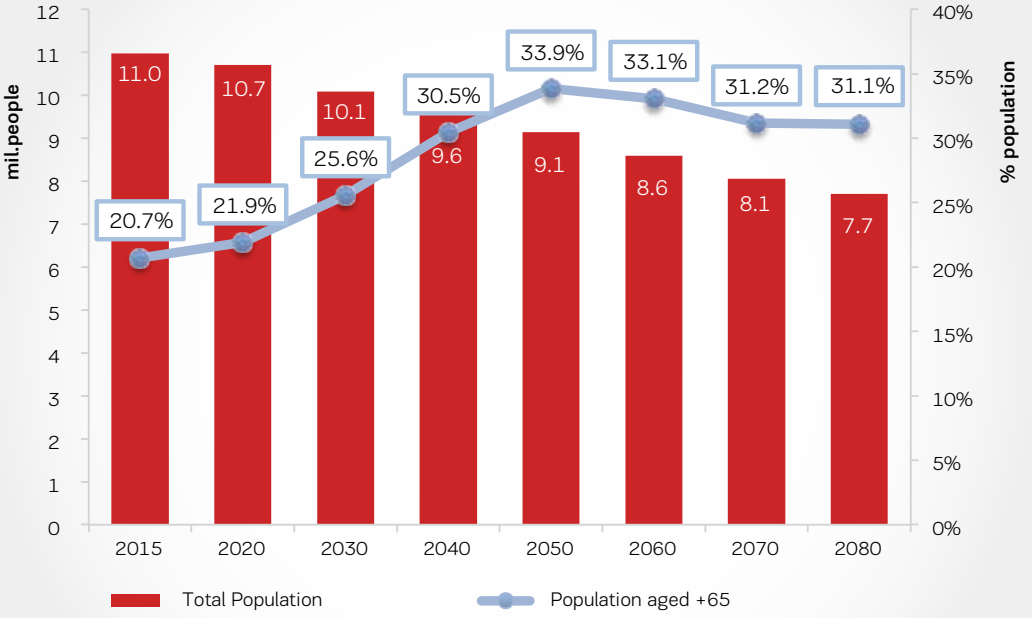
Year	Births	Deaths	Natural change*
1931	199.243	114.369	84.874
1950	151.134	53.755	97.379
1960	157.239	60.563	96.676
1970	144.928	74.009	70.919
1980	148.134	87.282	60.852
1990	102.229	94.152	8.077
2000	103.274	105.170	-1.896
2010	114.766	109.084	5.682
2011	106.428	111.099	-4.671
2012	100.371	116.668	-16.297
2013	94.134	111.794	-17.660
2014	92.148	113.740	-21.592
2015	91.877	121.592	-29.715

SOURCE: EL. STAT., 2016

* natural change is defined as the change due only to the difference in births - deaths without taking into account immigration

Based on the latest revision from Eurostat, this negative trend in the change of the Greek population is expected to continue until 2080, resulting in a reduction of the total population overall (Figure 5).

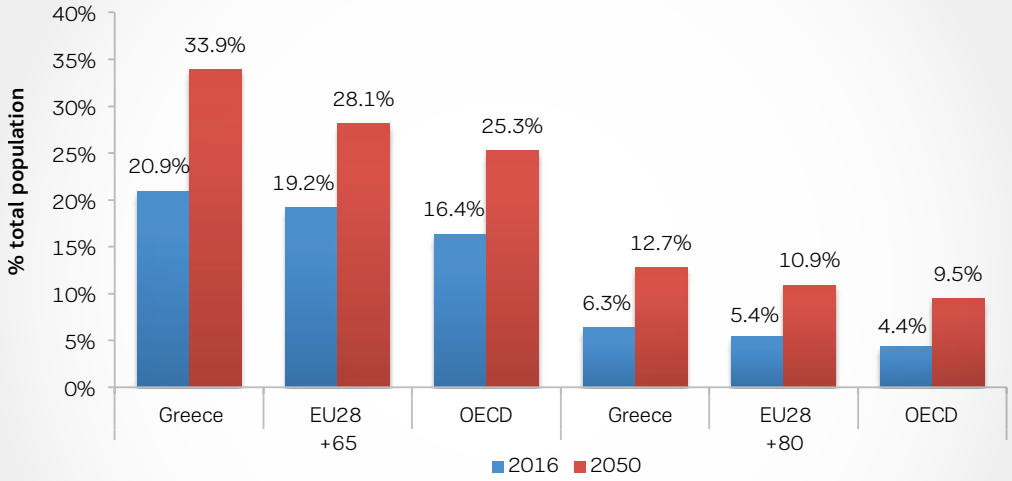
Figure 5: Projection of total population in Greece 2015-2080* (%)



Source: Eurostat, Population Projections, 2016, data processing IOBE
*Not included the possible legalization of migration from 2015 onwards

In 2016, the percentage of people aged 65+ years is estimated at 20.9% of the total population, and it is expected to reach 33.9% in 2050. Similarly, the proportion of people aged over 80 years is estimated to double in 2050 from 6.3% in 2016 proportions significantly higher than that of EU28 and OECD (Figure 6).

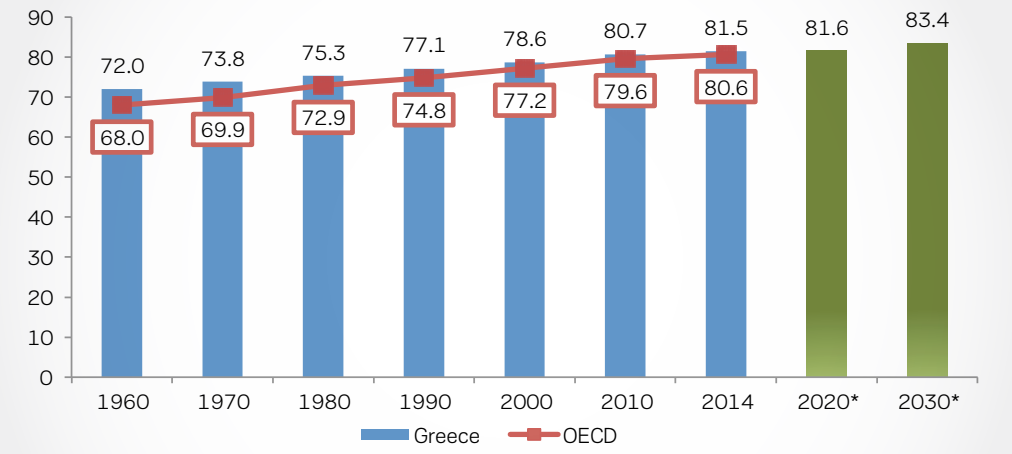
Figure 6: Projection of populations aged 65+ and 80+ in Greece, EU-28, OECD (%) 2016-2050



SOURCE: Eurostat, Population Projections, 2016, OECD, Historical Population Data and Projections Database, 2016, processing data IOBE

Life expectancy in Greece has increased considerably over the last 55 years, with a respective increase from 72 years in 1960 to 81.5 years in 2014 (+9.5 years) (Figure 7), partially explained by the technological advances, the improvement in the provision of healthcare services, the contribution of R&D and the introduction of new innovative therapies.

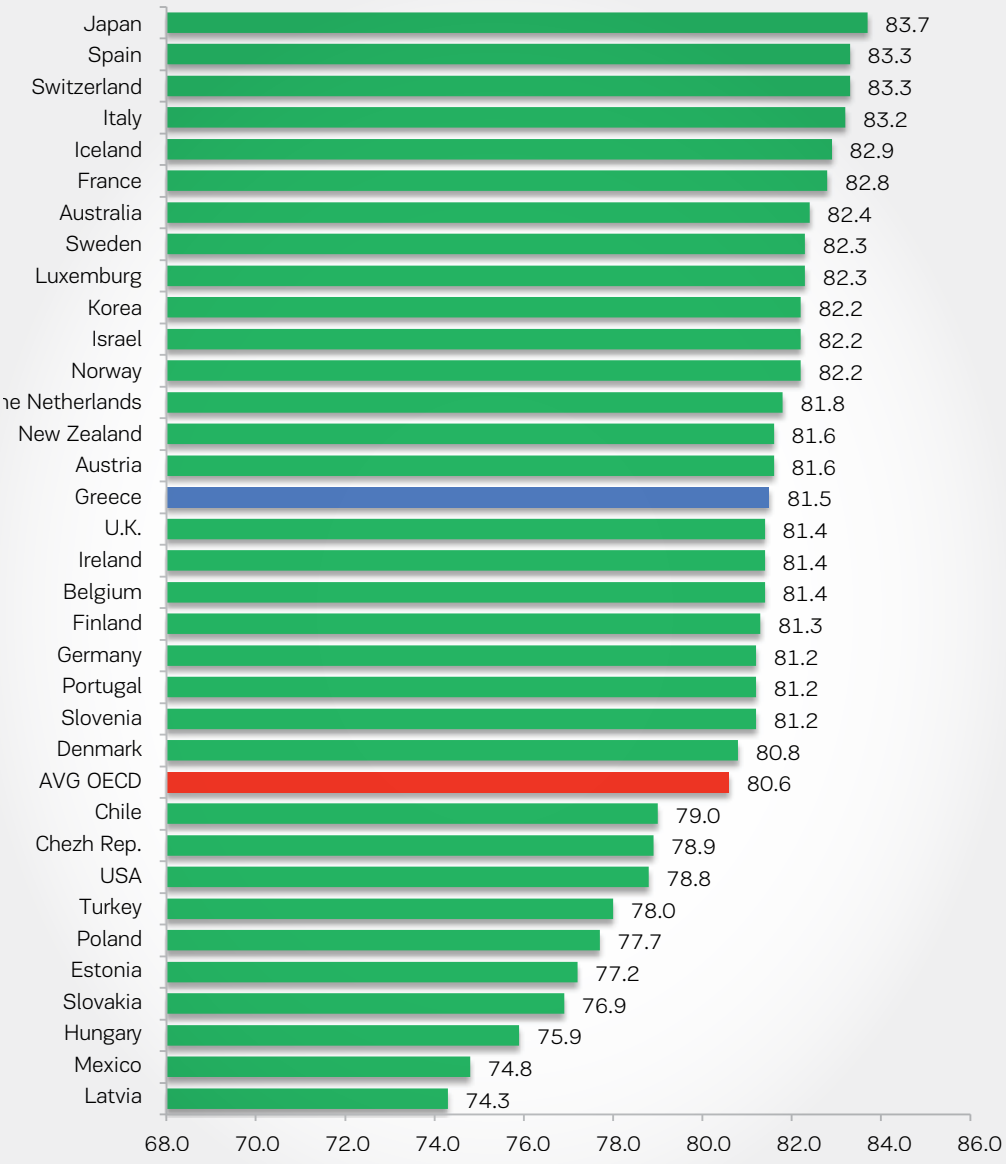
Figure 7: Evolution of life expectancy at birth in Greece 1960-2030



SOURCE: OECD, Health Data 2016, United Nations; * Estimation 2020-2030 from UN data

According to OECD data, life expectancy in Greece reached 81.5 years in 2014, which is higher than the respective average of 80.6 years. The highest life expectancy was recorded in Japan, Spain and Switzerland (Figure 8).

Figure 8: Life expectancy at birth in OECD countries 2014

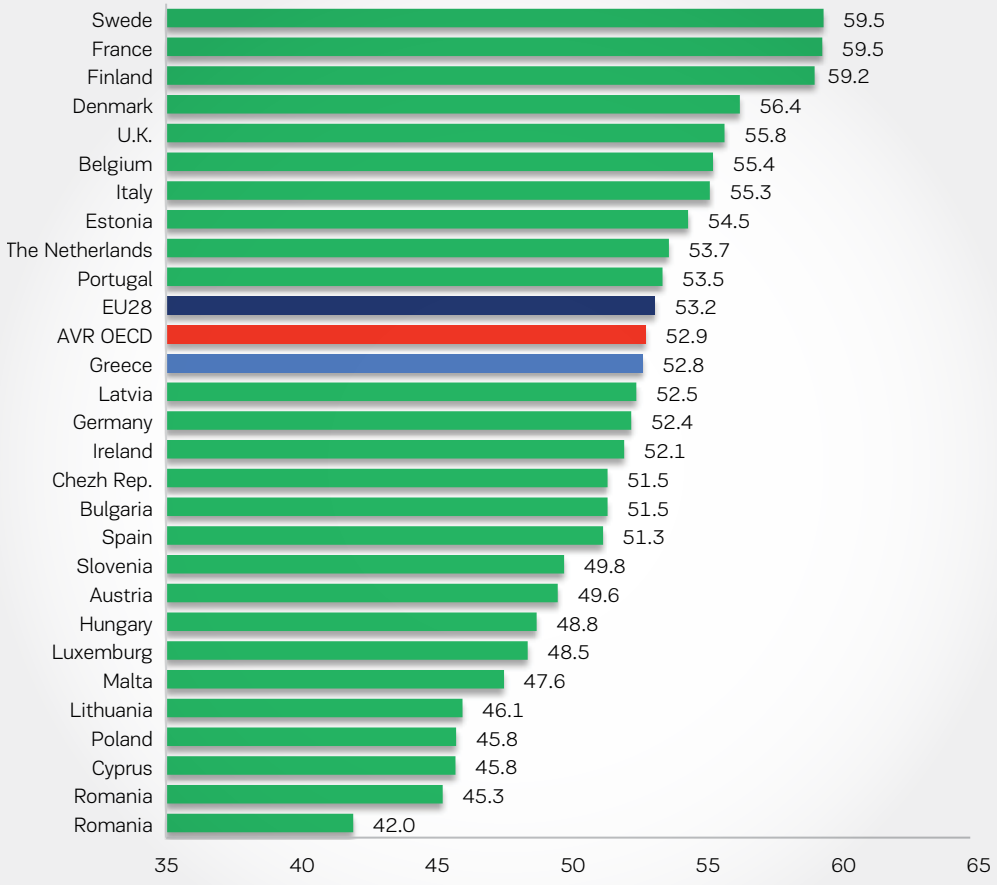


SOURCE: OECD, Health Data 2016

5.2 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 increased pressure on the social security system following the general trend in other developed countries[2]. In particular, the dependency ratio in Greece reached 52.8 in 2016, close to the EU28 average (53.2) and the average of OECD (52.9). It should be noted that in the above forecasts, migrants are not calculated.

Figure 9: Dependency population ratio In OECD counrties 2016

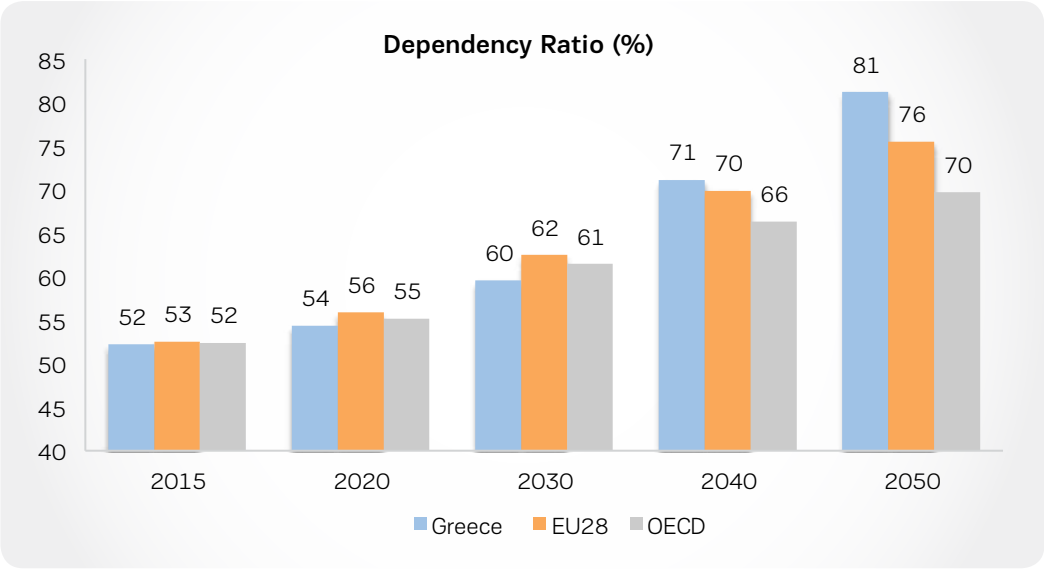


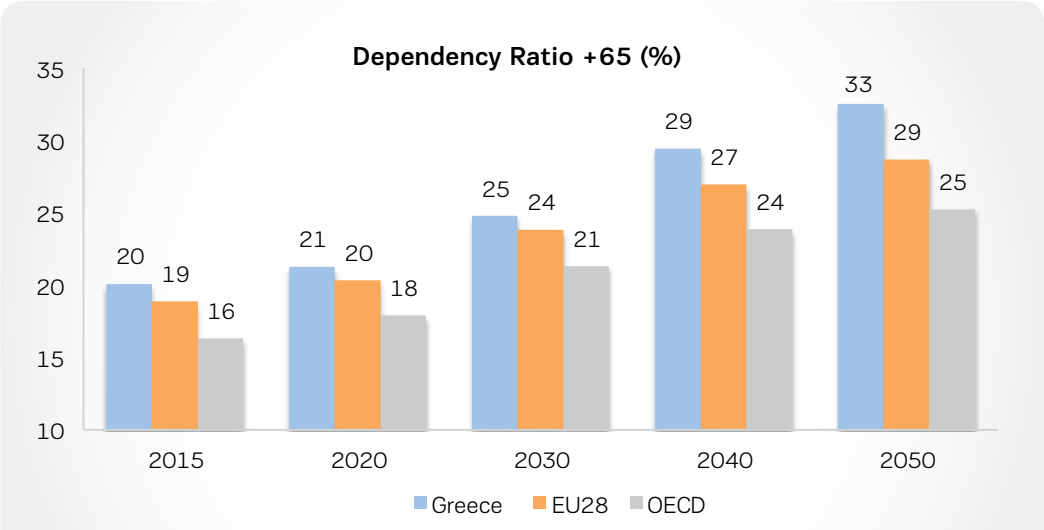
Source: OECD, Health Data 2016

2. 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.

According to OECD, the dependency ratio in Greece is estimated to reach 81% by 2050, while only in the age group +65 the dependency ratio is expected to increase at 33% in 2050 compared to 20% in 2015 (Figure 10). Also, in EE28 and in OECD countries, increase in the dependency ratio is also expected, but in a slower pace during the same period.

Figure 10: Projection of dependency population ratio 2015-2050 (%)





SOURCE: ΟΟΣΑ, Historical population data and projections (1950-2050), (2016)

5.3 PHARMACEUTICAL EXPENDITURE OF UNINSURED

The significant decrease in income, the high unemployment rate in combination with social and economic exclusion, have negatively affected society, resulting in an increase of uninsured citizens of 2.5 mil. in 2016.

With Law no. 4368/2016 and the CMD.25132 / 04.04.2016, free access to public health services was introduced for the first time. The most important change brought by the above legislative framework was the equal access for the insured and uninsured people to the public health services based on specific economic criteria ensuring the elimination of copayment on the cost of medication and the abolition of the compulsory fee of € 1 for EOPYY.

Table 3 shows the pharmaceutical expenditure of uninsured by EOPYY/private pharmacies, according to official EOPYY data since the announcement of these measures.

Table 3: Pharmaceutical expenditure of uninsured by EOPYY/private pharmacies 2016

Social Security Funds	EOPPY pharmacies	Private Pharmacies	Total
March	735.432,64	1.111.612,00	1.847.044,64
April	806.764,00	1.203.273,00	2.010.037,00
May	991.837,00	1.376.736,00	2.368.573,00
June	1.845.436,38	2.411.715,00	4.257.151,38
July	2.760.057,24	3.620.252,00	6.380.309,24
August	3.168.028,15	3.657.651,00	6.825.679,15
September	3.362.764,83	4.106.622,00	7.469.386,83
October	3.168.879,02	4.303.414,82	7.472.293,84

SOURCE: EOPYY,2016

5.4 CAUSES OF DEATH

During the period 2009-2014, a significant increase of 5.0% in the number of deaths was recorded in Greece with infectious and parasitic diseases to double, mainly due to deaths from bacterial diseases (from 853 to 3,203 patients). As shown in Table 4, the increase in the number of deaths from bacterial diseases were followed by respiratory disease (18.4%), other causes (15.4%) and neoplasms (7.9%).

Table 4: Causes of death in Greece (ICD-10 code) 2009-2014

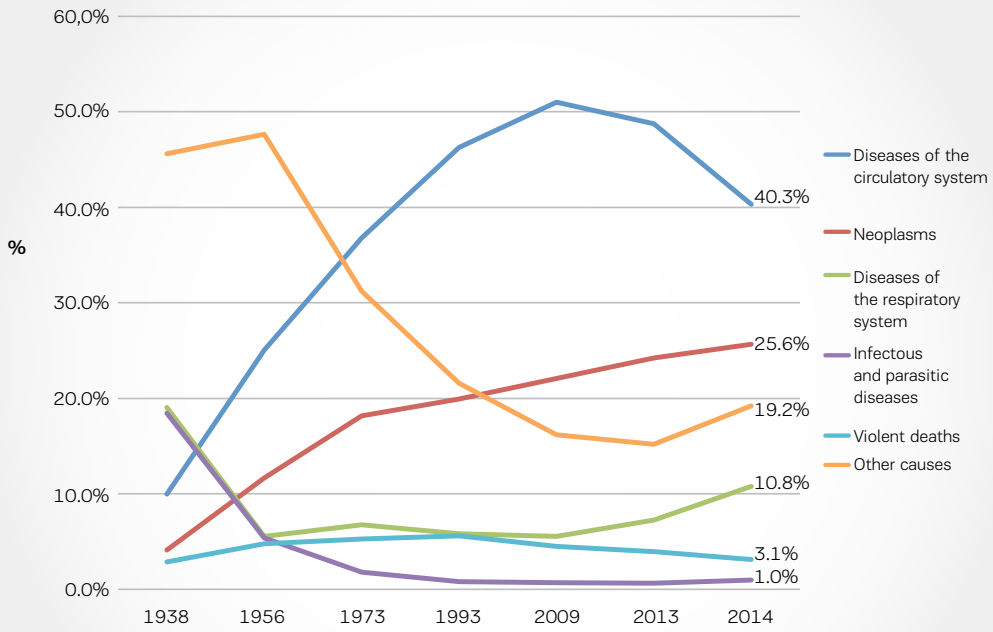
		2009	2014
1	**Diseases of the circulatory system (of which)**	48.453	45.148
	Heart disease	31.976	29.789
	Cerebrovascular diseases	15.493	14.279
	Other circulatory system diseases	984	1.791
2	**Neoplasms**	27.345	29.508
3	**Diseases of the respiratory system**	10.770	12.751
4	**Violent deaths (of which)**	3.868	3.554
	Accidents related to transport	1.647	1.025
	Other accidents	1663	1773
	Suicides	391	565
	Homicides	167	121
	Other violence *	0	70
5	**Infectious and parasitic diseases**	1.183	3.515
6	**Other Causes**	16.697	19.264
	Endocrine and metabolic diseases, nutrional deficiencies and immonity	1.404	1.952
	Diseases of blood and blood-forming organs	211	285
	Mental disorders	109	665
	Diseases of the nervous system and sense organs	1.517	2.523
	Diseases of the digestive system	2.585	3.294
	Diseases of the genitourinary system	1.859	2.791
	Complications of pregnancy, childbirh and the puerperium	4	4
	Diseases of the skin and subcutaneous tissue	35	66
	Diseases of the musculoskeletal system and connective tissue	426	231
	Congenital anomalies	214	155
	Certain conditions originating in the perinatal period	172	190
	Symptoms, signs and indefinable conditions	8.161	7.109
	TOTAL DEATHS	**108.316**	**113.740**

SOURCE: EL.STAT., 2016, data processing IOBE

*Pursuant to the 9th Revision of the International Statistical Classification of Diseases, Injuries and Causes of Death (ICD-9) 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.

Despite the decline in recent years, the number of deaths in Greece due to circulatory system diseases in 2014 accounted for 40.3% of total deaths, while the number of deaths due to neoplasms is continuously increasing and estimated at 25.6%. Interestingly, increase in the number of deaths due to diseases of the respiratory system is noted after 2009, following a stabilization period, while the violent deaths and deaths due to infectious and parasitic diseases compose a small part of total deaths.

Figure 11: Causes of death in Greece 1938-2014 (%)

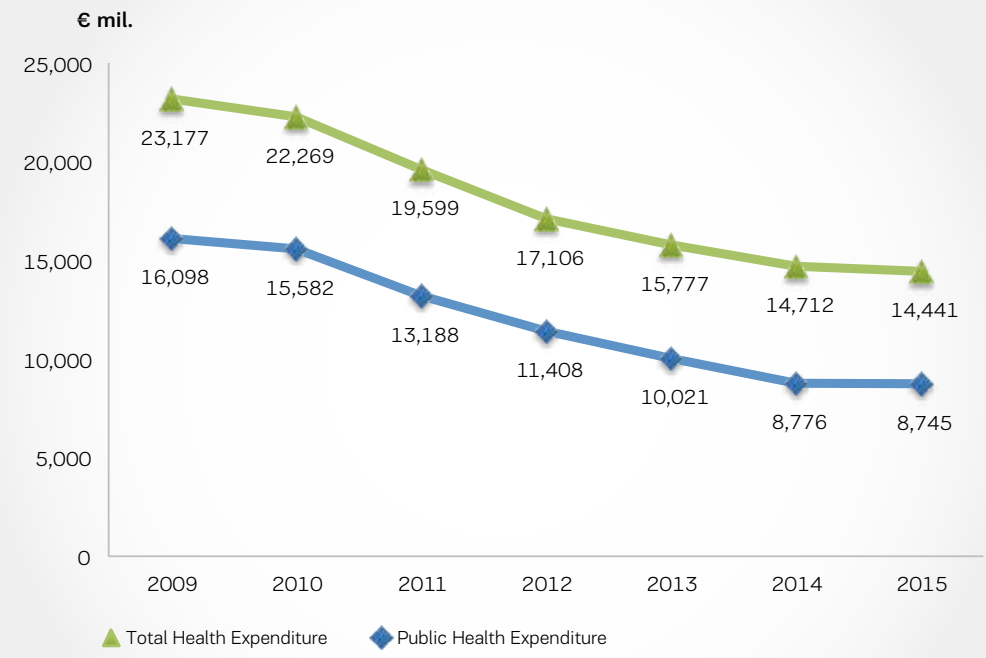


SOURCE: EL.STAT., 2016 data processing IOBE

6 DEMAND SIDE: HEALTH AND PHARMACEUTICAL EXPENDITURE IN GREECE

In Greece, total health expenditure[3] amounted to €14.4 bil., out of which €8.7 bil., compose the public health expenditure. Total health expenditure declined by -1.8% from 2015 compared to 2014, while during the period 2009-2015 the respective reduction accounted for -37.7%. Respectively, in 2015 **public health expenditure** showed a slight decrease of -0.3% compared to the previous year, while compared to 2009, public health expenditure decreased by -45.7%. Therefore, there was an increase in **private health expenditure** by 19.5% during the period 2009-2015.

Figure 12: Total & Public Health Expenditure 2009-2015 (mil. €)

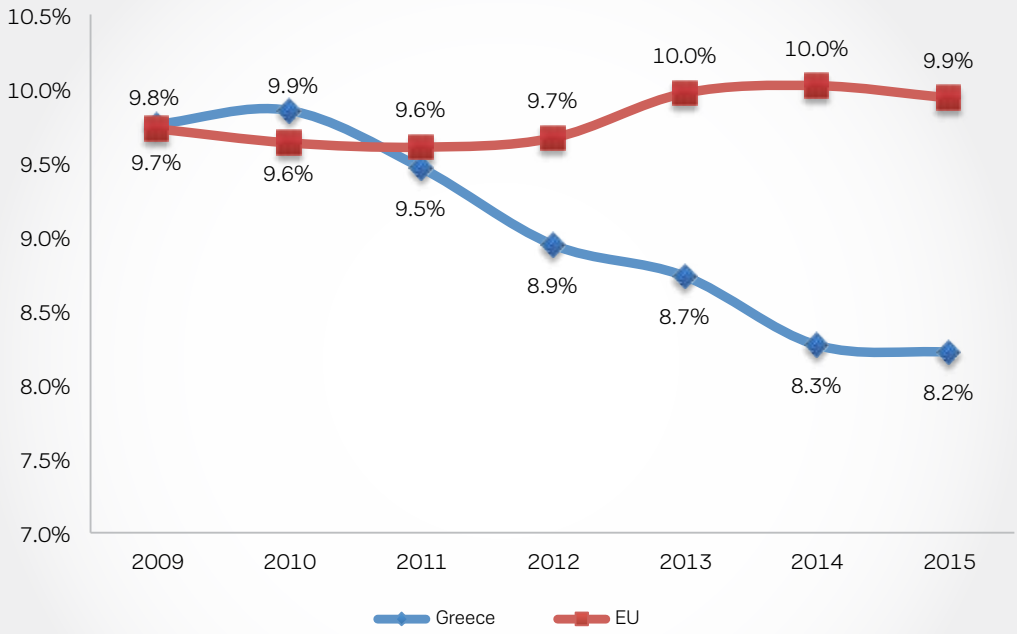


Source: System of Health Accounts (SHA) 2014, OECD Health Data, 2016, data processing IOBE

3. The Hellenic Statistical Authority (EL.STAT.) publishes 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. The data have been revised based on the new methodology for the period 2009-2013.

In 2009, total health expenditure as a percentage of GDP accounted for 9.8% in Greece, while in 2015 decreased at 8.2%[4], indicative of a faster reduction in health expenditure compared to the reduction of GDP during the same period. This evolution has shaped the rate of total health expenditure in Greece below the EU average (9.9%), which remains almost stable in the period 2013-2015. Specifically, total health expenditure as a percentage of GDP accounted for 11% in Germany, Sweden and France, while lower rates exist in Latvia (5.6%), Poland (6.3%) and Estonia (6.4%). Finally, in countries that have implemented fiscal adjustment programs, such as Ireland, Spain and Portugal, the respective rates are 9.4%, 9.0% and 8.9%.

Figure 13: Total Health Expenditure 2009-2015 (% GDP)

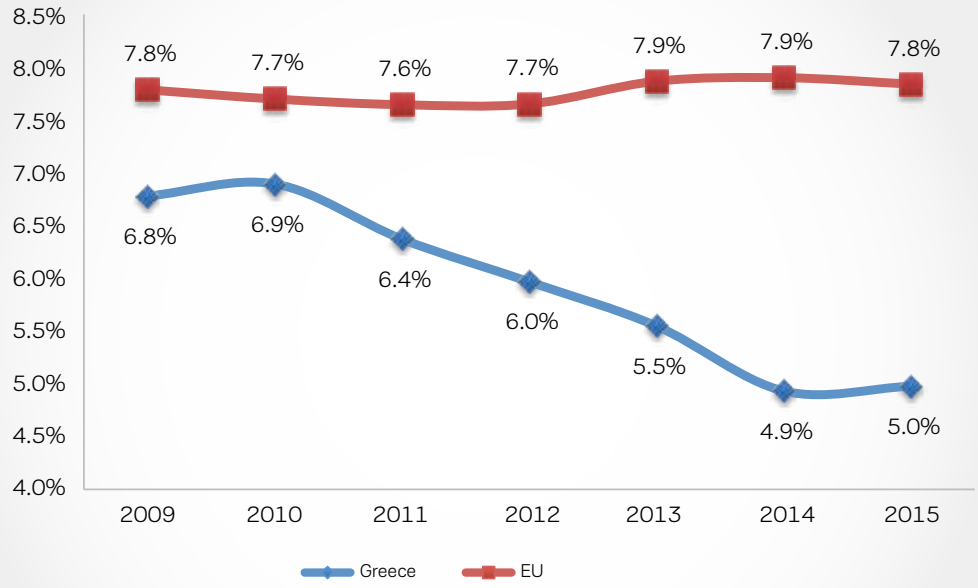


SOURCE: System of Health Accounts (SHA) 2014, EL. STAT., 2016, OECD Health Data, 2016, data processing IOBE
*EU-23: (not available data for Bulgaria, Croatia, Cyprus, Romania and Malta)

4. It should be noted that according to OECD data the percentage of health expenditure is 9.2%, and has calculated with the old methodology SHA 1.0, while 8.6% correspond to the new SHA methodology 2011

In Greece, public health expenditure as a percentage of GDP was close to 5.0% in 2015, compared to 6.8% in 2009. In EU, the respective rate remained close to 7.8% throughout 2009 -2015. In individual countries, public health expenditure as a percentage of GDP, reached 9.4% in Germany and 9.2% in Sweden, while the lowest rates exist in Latvia (3.4%) and Lithuania (4.4%). Finally, in countries that have implemented fiscal adjustment programs, Spain, Portugal and Ireland, the respective rates are 6.3%, 5.8% and 5.3%.

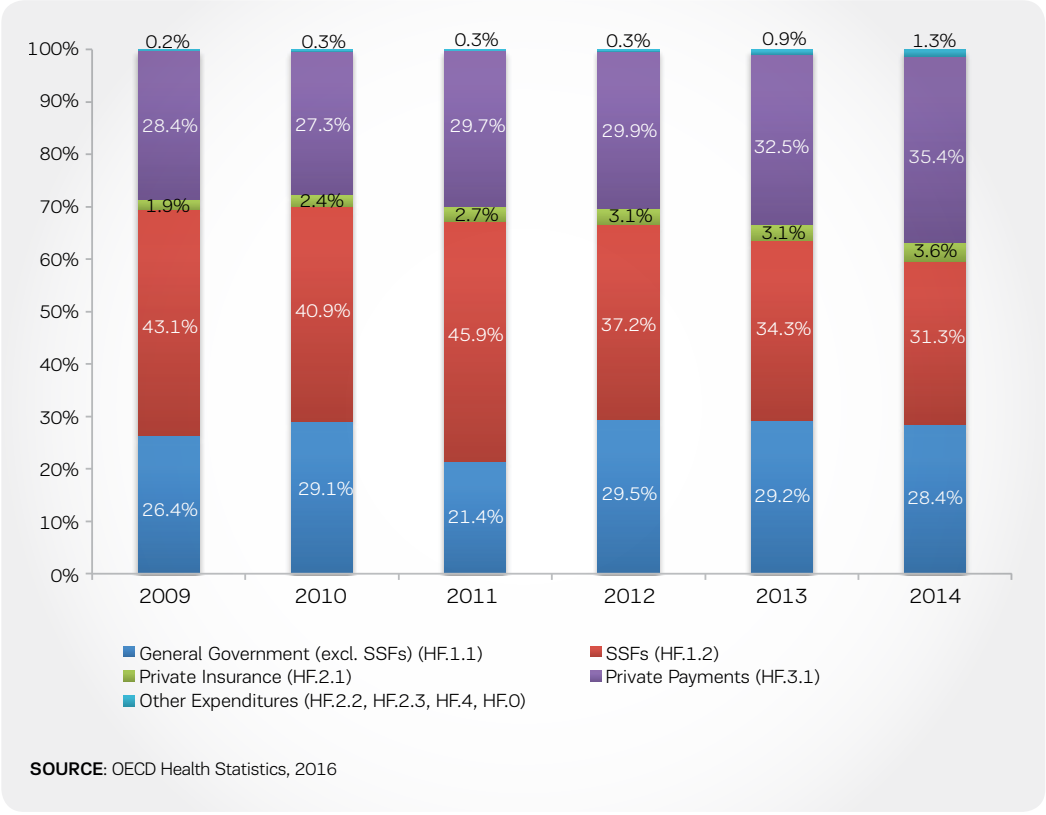
Figure 14: Public Health Expenditure 2009-2015 (% GDP)



SOURCE: System of Health Accounts (SHA) 2014, EL. STAT., 2016, OECD Health Data, 2016, data processing IOBE
*EU-23: (not available data for Bulgaria, Croatia, Cyprus, Romania and Malta)

Figure 15 shows the contribution on health financing by the General Government, households, private insurance companies and other entities. Overall, a decrease in the public sector contribution (General Government & SSFs) is noted, from 63.5% in 2013 to 59.7% in 2014. According to the available data, the contribution health financing decreased both by the General government (-0.8%), and by the Social Security Funds (SSF) (-3.0%) in 2014 compared to the previous year. This drop is considerably greater if the reduction of total health financing in absolute numbers is taken into account. It is worth noting that the contribution on health financing by SSFs comprises only 31.3% of total health financing in 2014 compared to 43.1% in 2009, recording a decrease of -54% during the period 2009-2014. The difference was covered by increased household contribution on health financing from 28.4% in 2009 to 35.4% in 2014.

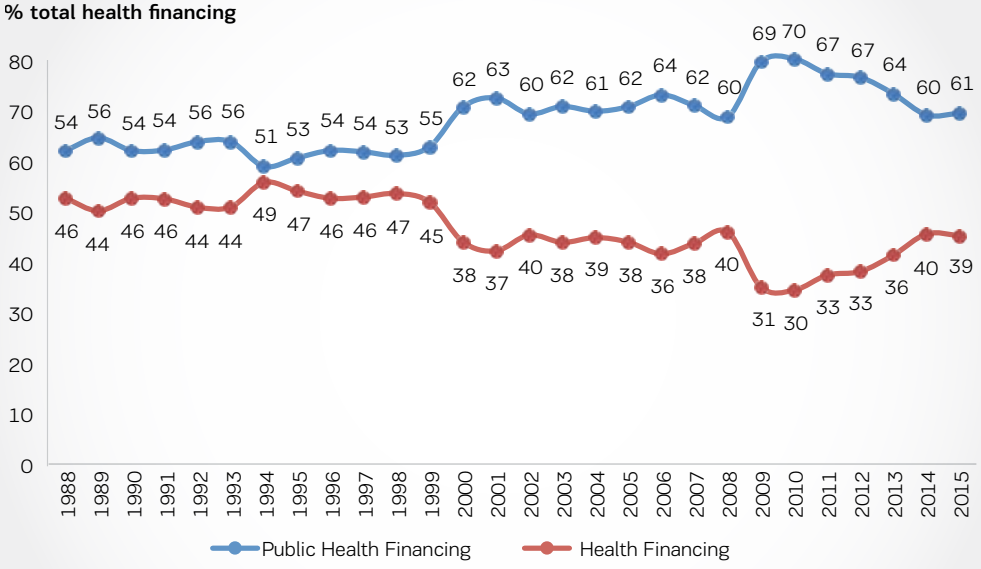
Figure 15: Contribution on Health Financing by provider 2009-2014 (%)



SOURCE: OECD Health Statistics, 2016

Special attention should be given to the evolution of financing by summing the public (General Government and Social Security) and private (Private Insurance & Private Payments), during the period 1988-2015. Public health financing as a percentage of total health financing, recorded an increase from 50% in 1994 to 60% in 2008. Until 2008 the financial burden was posed on the public sector, when need for fiscal adjustment caused reverse image, with an increase in the private sector contribution 2009 onwards, however still below the average of the period 1988 - 2008 (43%).

Figure 16: Evolution of Public & Private Health Financing in Greece 1988-2015 (%)



SOURCE: OECD Health Statistics, 2016

6.1 PHARMACEUTICAL EXPENDITURE

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 6.5% and mandatory discounts/ rebates/ clawback from pharmacists and pharmaceutical companies);

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 Greek citizens or tourists at their own cost;

E → Patient's copayment, which does not burden social security funds.

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.

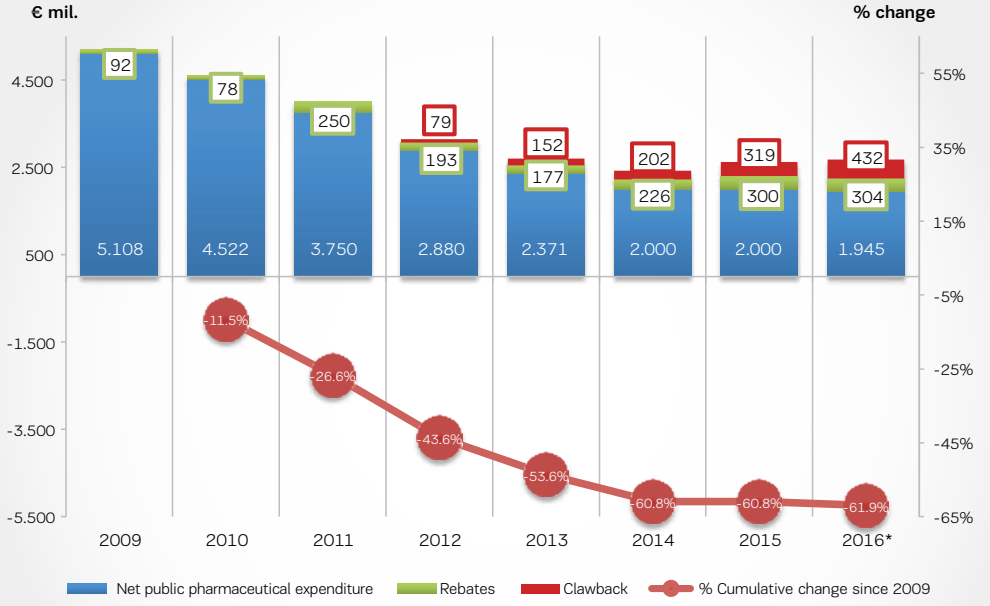
Regarding points (c) and (d), it should be noted that these sales are not part of public pharmaceutical expenditure; on the contrary, revenue to the government is generated, in the form of VAT, income tax, payroll tax, social security contributions, etc.

Pharmaceutical expenditure is only a subset of total health expenditure. However, due to the fact that the fiscal adjustment program has focused on the contraction of the pharmaceutical expenditure alone, its analysis is of high significance.

Public pharmaceutical expenditure is the final amount Social Security Funds spend to cover population needs, after deduction of rebates and clawback. In 2015, pharmaceutical expenditure was set at €2 bil., while in 2016 was further reduced at €1.945 bil. resulting in an overall decrease of -61.9% during the period 2009-2016.

Accordingly, there was a significant increase in clawback and rebates. Specifically, in 2015 an increase of 58.2% was recorded in clawback and 32.5% in rebates compared to the previous year. These numbers are expected to increase further in 2016 (according to available data for the first semester) estimated at €432 mil. on clawback and €304 mil. in rebates.

Figure 17: Net Public Pharmaceutical Expenditure 2009-2016



SOURCE: System of Health Accounts (SHA) 2014, EOPYY 2012-2016, State Budget 2014-2016, FEK 1803/2015, data processing IOBE

* Rebates do not involve discounts; 2016 is based on the official clawback note for the first half.

The reduction in public pharmaceutical expenditure from 2012 onwards has proven insufficient to meet Greek patients' needs, thus posing a significant economic burden to the private sector, specifically to patients and pharmaceutical industry. In particular, as shown in Table 5, the contribution of pharmaceutical companies in the actual public pharmaceutical expenditure, through clawback & rebates, is continuously growing reaching 23.6% in 2015 from 8.6% in 2012, while a further increase of 27.5% is expected for 2016 (available data for the first semester).

Table 5: Contribution of the industry in Pharmaceutical Expenditure 2012-2016

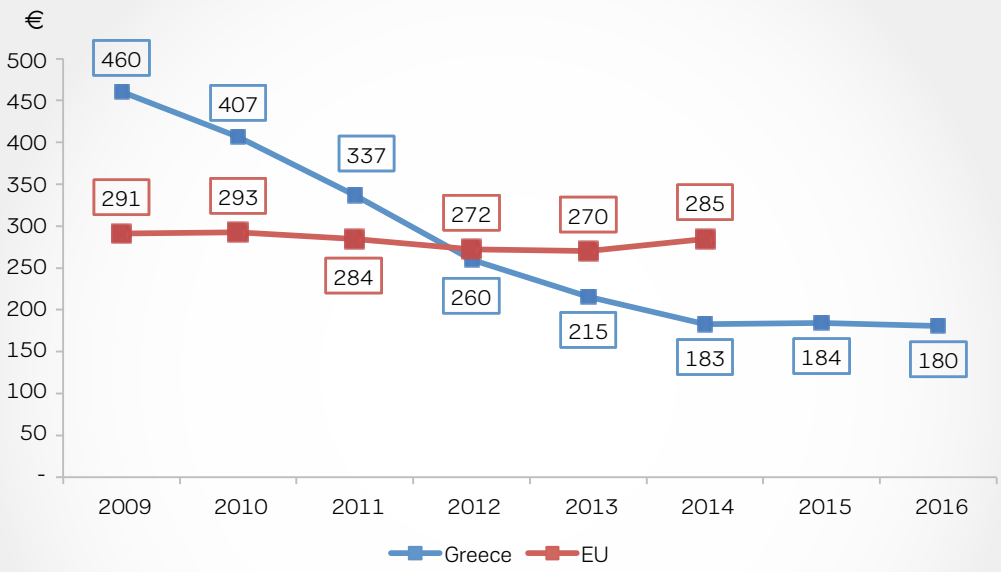
Year	Industry Rebates	Industry Clawback	Total (a)	Pharmaceutical expenditure (b)	% participation of industry in pharma expenditure***
2012	€193 mil.	€78 mil.	€271 mil.	€2,880 mil.	8,6%
2013	€177 mil.	€153 mil.	€330 mil.	€2,371 mil.	12,2%
2014	€226 mil.	€ 204 mil.	€430 mil.	€2,000 mil.	17,6%
2015	€300 mil.	€319 mil.	€619 mil.	€2,000 mil.	23,6%
2016**	€304 mil.	€432 mil.	€736 mil.	€1,945 mil.	27,5%

SOURCE: SFEE

* Mandatory discounts such as simulation hospital price (8.74%), mandatory hospital discounts (5%) etc, are not included here.**Estimations EOPYY for the 1st half of 2016 *** % participation of industry in pharma expenditure is calculated as the ratio (a/(a+b))

Similarly, a downward trend was observed in the public pharmaceutical expenditure per capita in Greece, from €460 in 2009 to €180 in 2016 since pharmaceutical expenditure decreased by -60.8%, while the population decreased by -2.8% during this period. Specifically, in EU (available data for 22 counties) public pharmaceutical expenditure per capita was reduced from €291 in 2009 to €285 in 2014, approximately €100 higher compared to Greece. In the EU, a slight decline in the public pharmaceutical expenditure is observed in 12 countries, with the overall balance being slightly negative.

Figure 18: Public Pharmaceutical Expenditure per capita, Greece and EU, 2009-2016

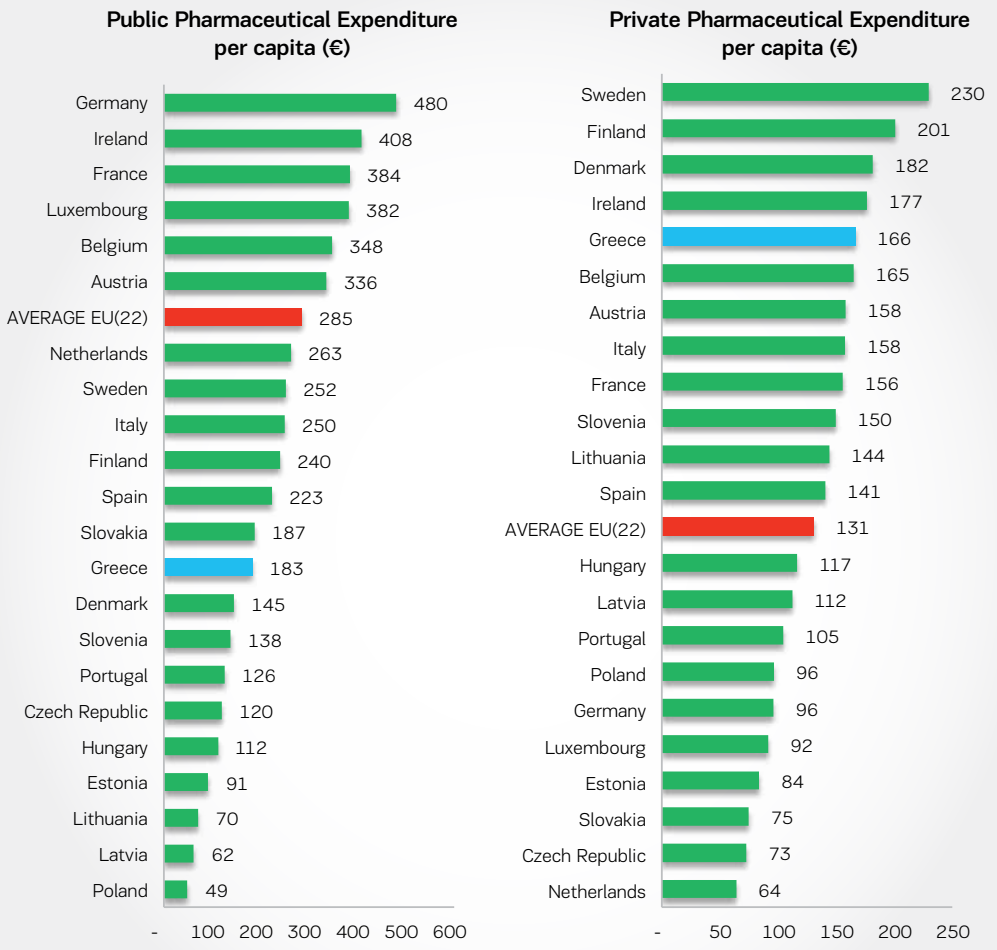


SOURCE: System of Health Accounts (SHA) 2013, EOPYY 2014, State Budget 2014: Executive Summary, OECD Health Data 2015, Eurostat, data processing IOBE.

* The pharmaceutical expenditure data include the expenditure paid by the social security institutions, ie after the clawback and rebates have been calculated; ** EU-22: (data not available for Bulgaria, Croatia, Cyprus, Romania, Malta, UK)

More specifically, the higher public pharmaceutical expenditure per capita is recorded in Germany, Ireland and France, while Greece (€183)[5] is below the EU average (€ 285) with data available for 2014. On the contrary, private pharmaceutical expenditure per capita in Greece (€166) is higher than the EU average (€131), ranking Greece 5th among EU countries.

Figure 19: Public & Private Pharmaceutical Expenditure per capita (2014)



SOURCE: System Health Accounts (SHA) 2014, EOPY 2012-2016, Introductory Budget Report 2016 for 2014-2015, OECD Health Data 2016, Eurostat 2016, IOBE data processing, SFEE. Pharmaceutical expenditure data includes the expense paid by social security providers, after the clawback and rebates have been calculated.

5 2014 data

6.2 HEALTH EXPENDITURE & PHARMACEUTICAL EXPENDITURE

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

- **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 (eg. 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

Note that in the present analysis, so as to have a deeper understanding of pharmaceutical expenditure the category "Products Supply for Outpatient Patients (HC.5)" has been split to:

- **Products Supply for Outpatient Patients (HC.5)**
  - → Pharmaceuticals and other medical goods (HC.5.1)[6]
  - → Other Medical Products (HC.5.2)

Also, for a more complete representation of the expenditure of care services and rehabilitation, total expenditures are divided into inpatient and outpatient:

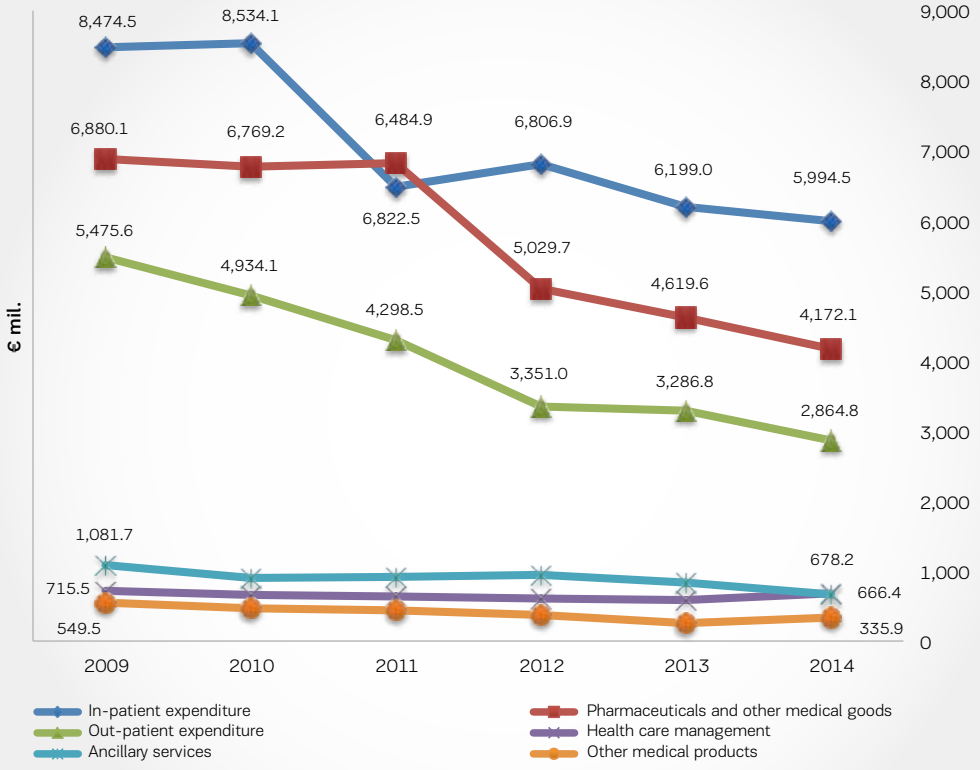
- **Care Services, Rehabilitation**
  - → **In-patient public and private expenditure**
    - Therapeutic Care (HC.1.1 + HC.1.2)
    - Rehabilitation Services (HC.2.1 + HC.2.2)
    - Long-term Nursing Care Services (HC.3.1 + HC.3.2)
  - → **Out-patient public and private expenditure (eg doctors, dentists)**
    - Therapeutic Care (HC.1.3)
    - Rehabilitation Services (HC.2.3)
    - Long-term Nursing Care Services (& home) (HC.3.3 + HC.3.4)

6 This category contains OTC and high-cost products (L.3816/2010).

In 2014, inpatient expenditure amounted to € 6.0 bil. from € 6.2 bil. in 2013, showing a decrease of -3.3%. Overall, the decline in this category during the period 2009-2014 was -29.3% (from €8.5 bil. in 2009). The most significant decrease was seen in the expenditure for ancillary healthcare services of -20% in 2013, while in 2014 accounted for €666 mil. A significant decline of -12.8% was also observed in out-patient expenditure estimated at €2.9 bil. in 2014, almost half from 2009 levels.

In the category expenditure for 'Pharmaceuticals and other medical goods (HC.5.1) was decreasd by -9.7% in 2014 compared to 2013, unlike the expenditure for 'Other medical products (HC.5.2)', which increased by 31.4% the same period. These two categories together constitute the category Disposal of medical products in out-patient setting.

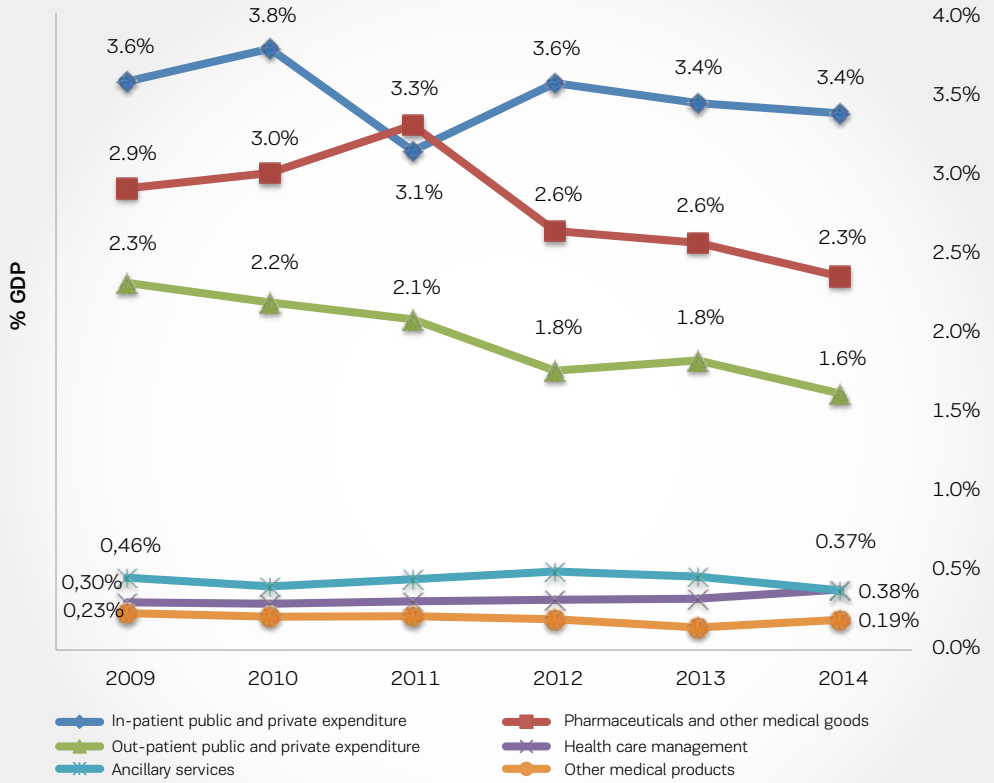
Figure 20: Total Health Expenditure by category 2009-2014 (mil.€)



SOURCE: System of Health Accounts (SHA) 2014, EL.STAT., 2016, data processing IOBE
The categories refer to the HP classification of individual categories according to the SHA

The figure below (Figure 21) shows the total health expenditure by category expressed as a percentage of GDP during the period 2009-2014, when a significant decline of -25.2% was recorded in nominal terms. In-patient and rehabilitation expenditure account for 3.4% of GDP in 2014, with no significant changes during the period 2009-2014, while expenditure for disposing of pharmaceuticals and other medical goods decreased from 2.9% in 2009 to 2.3% in 2014. Finally, a significant decline was recorded in out-patient expenditure from 2.3% of GDP in 2009 to 1.6% in 2014.

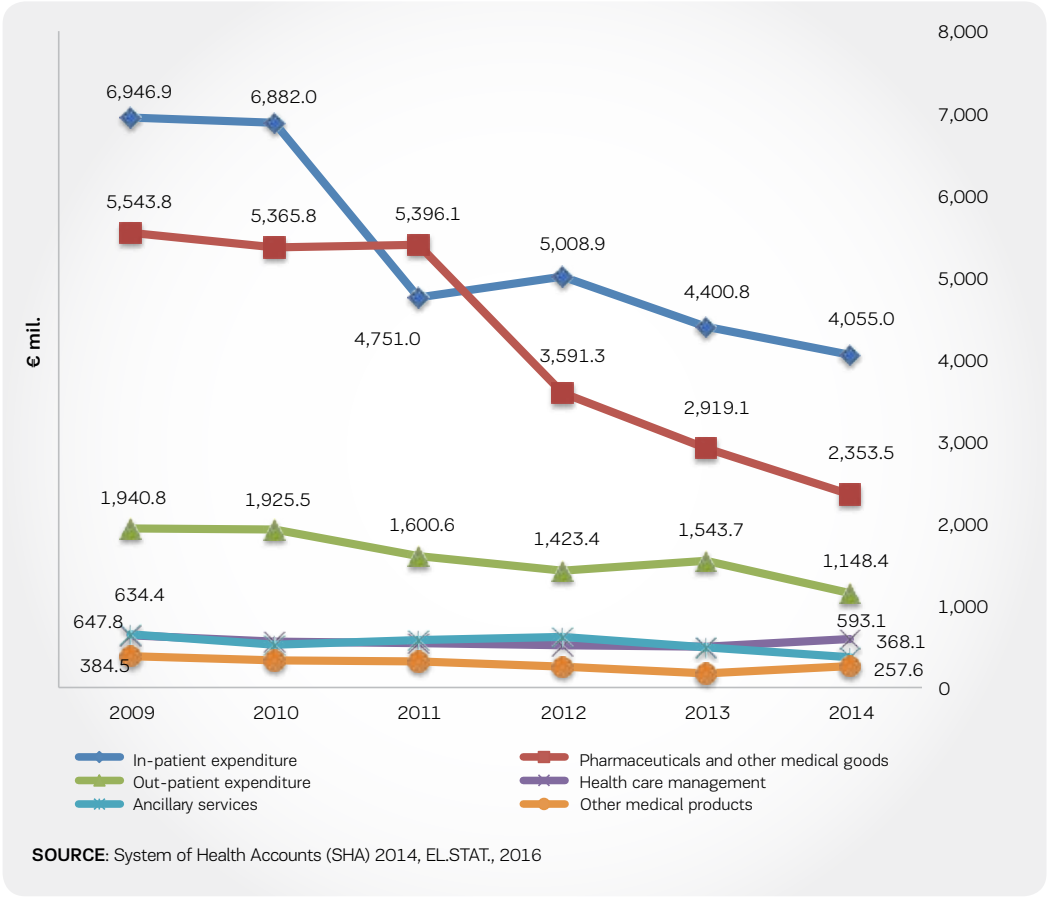
Figure 21: Total Health Expenditure by category 2009-2014 (% GDP)



SOURCE: System of Health Accounts (SHA) 2014, EL.STAT., 2016, data processing IOBE

In 2014, the largest part of public health expenditure is covered by in-patient expenditure of € 4.1 bil., followed by pharmaceuticals and medical goods expenditure of 2.4 bil. (Figure 22). It is worth noting that both expenditure categories show a significant decrease of -41.4% and -57.4% respectively compared to 2009. Out-patient expenditure amounted to € 1.1 bil. in 2014, decreased by € 732 mil. compared to 2009.

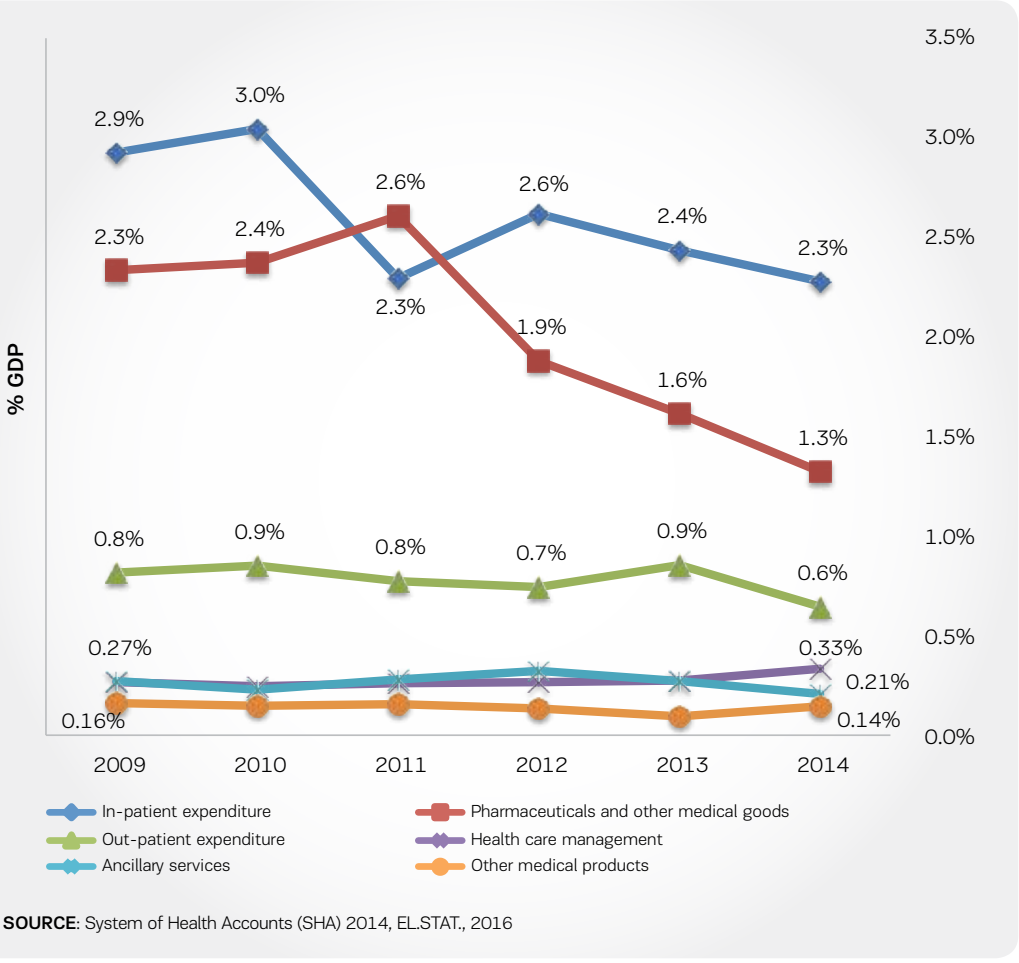
Figure 22: Public Health Expenditure by category 2009-2014 (€ mil.)



SOURCE: System of Health Accounts (SHA) 2014, EL.STAT., 2016

Inpatient expenditure as a percentage of GDP (Figure 23) accounts for 2.3% in 2014, compared to 2.9% in 2009, while expenditure for medicines and other consumables was further reduced to 1.3% in 2014 compared to 2.3% in 2009. It should be noted that a significant contraction in GDP was recorded between 2009 and 2014, with the decline in rates indicating a greater decline in public health expenditure relative to income.

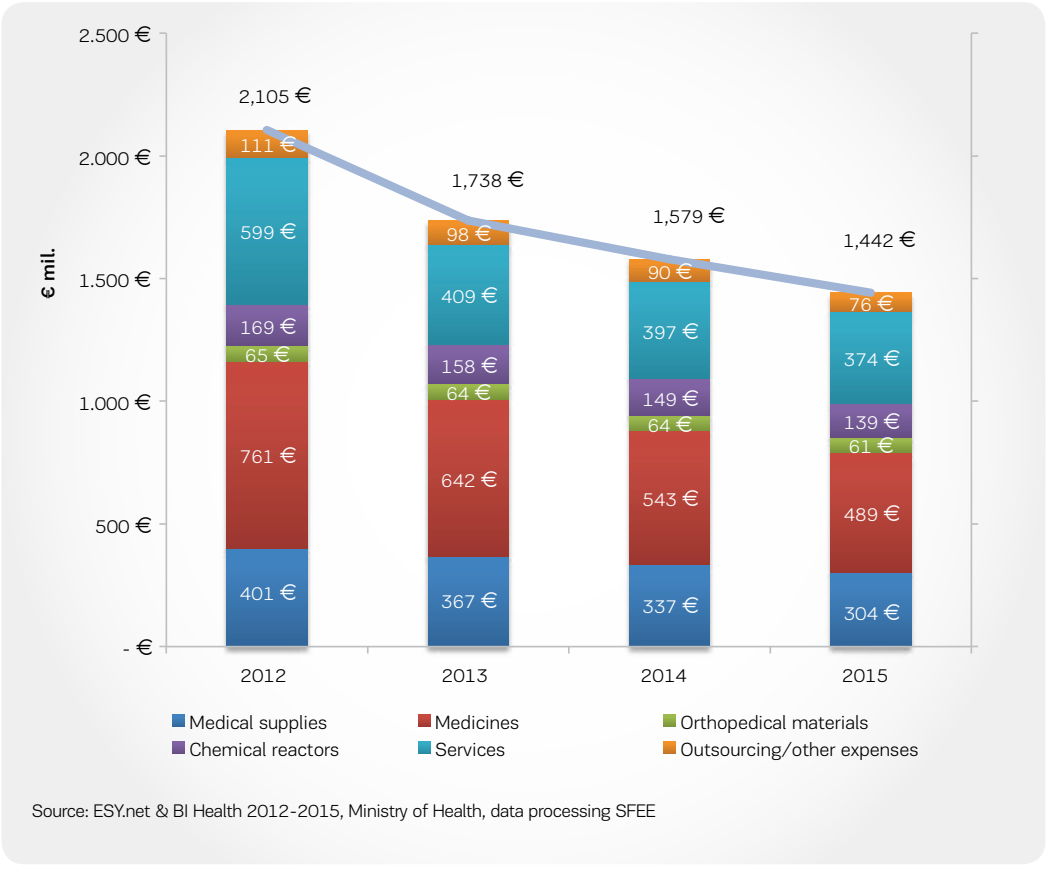
Figure 23: Public Health Expenditure by category 2009-2014 (% GDP)



SOURCE: System of Health Accounts (SHA) 2014, EL.STAT., 2016

Reduction in public health expenditure in Greece can also be reflected in the evolution of hospital expenditure, excluding payrolls. It is noteworthy that during the period 2012-2015, hospital expenditure was reduced by -31.5%, reaching €1.4 bil. in 2015.

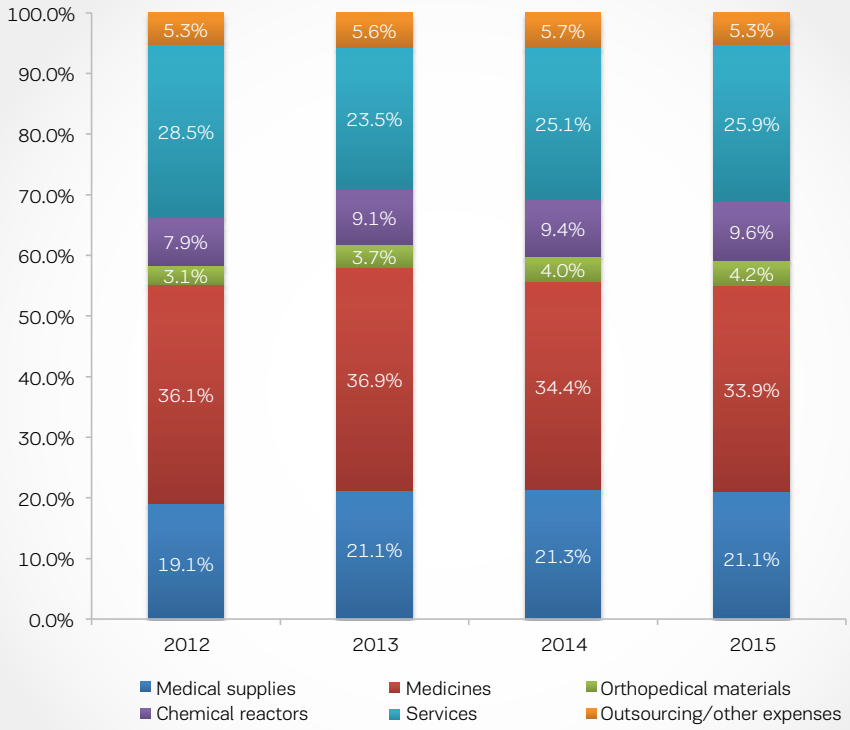
Figure 24: Evolution of NHS Hospital Expenditure 2012-2015 (€ mil.)



Source: ESY.net & BI Health 2012-2015, Ministry of Health, data processing SFEE

This reduction was not allocated equally among the different cost-centers of hospital expenditure. Specifically, during 2014-2015, the greatest reduction was marked in expenditure for services and medicines reaching -37.6% and -35.8%, respectively. According to Figure 25, medicines represent 33.9% of the hospital expenditure in 2015 compared to 36.1% in 2012.

Figure 25: Breakdown of NHS Hospital Expenditure 2012-2015 (%)

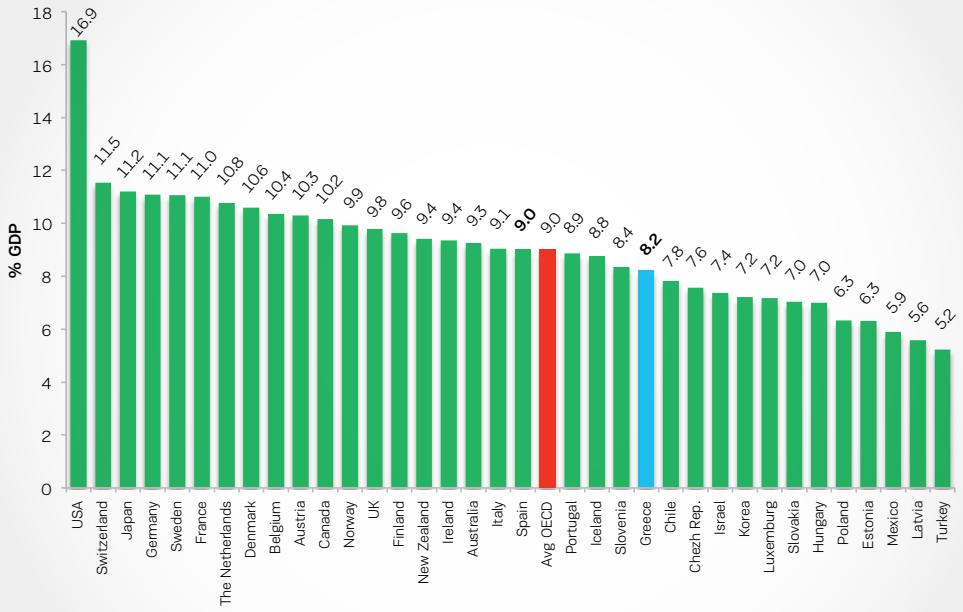


SOURCE: Ministry of Health, data processing IOBE-SFEE

6.2.1 COMPARISON WITH OTHER COUNTRIES

Health expenditure as a percentage of GDP in Greece in 2015 accounted for 8.2%, which is lower than the average of OECD countries (9%) but also lower compared with countries with economic crisis like Italy (9.1%), Spain (9%) and Portugal (8.9%).

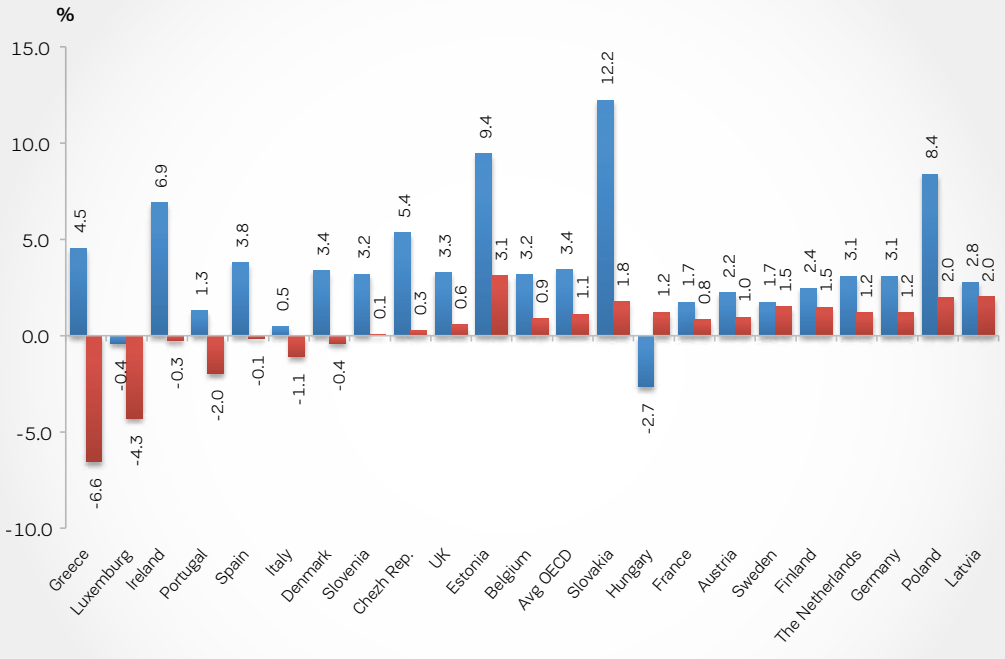
Figure 26: Health Expenditure in OECD countries 2015 (% GDP)



SOURCE: OECD, Health Data 2016, SHA, 2014

Additionally, during the period 2009-2015 total health expenditure per capita in Greece decreased by -6.6%, which accounted for the greatest reduction among OECD countries during the same period, as shown in figure 27. It is worth noting that the majority of OECD countries showed an increase in total health expenditure per capita.

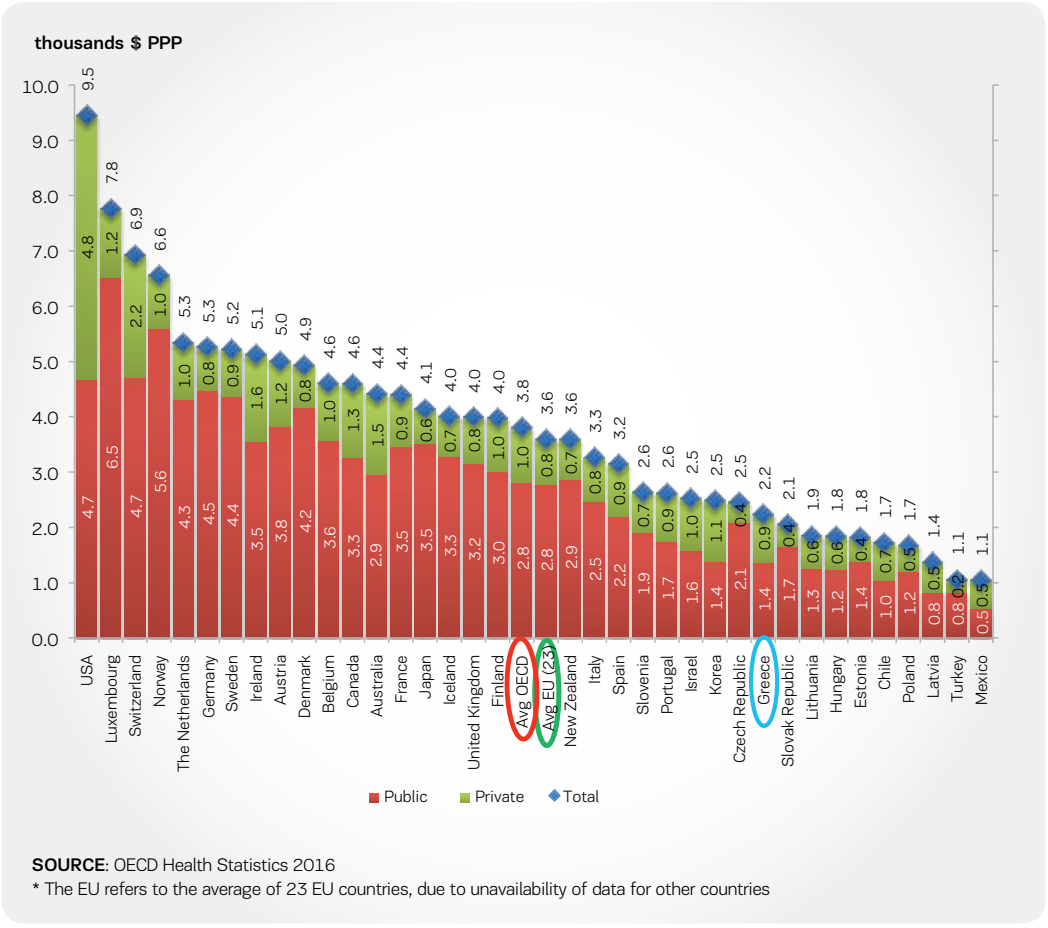
Figure 27: Annual change in Total Health Expenditure per capita in OECD (%)



SOURCE: OECD, Health Statistics 2016

Total health expenditure per capita and public health expenditure per capita in Greece (Figure 28), expressed in $ PPP[7], were lower than in other EU countries by 38.9% and 52.1% respectively. On the contrary, private health expenditure per capita was slightly higher in Greece compared to EU average and close to the OECD average.

Figure 28: Health Expenditure per capita 2015 ($ PPP, Purchasing Power Parity)

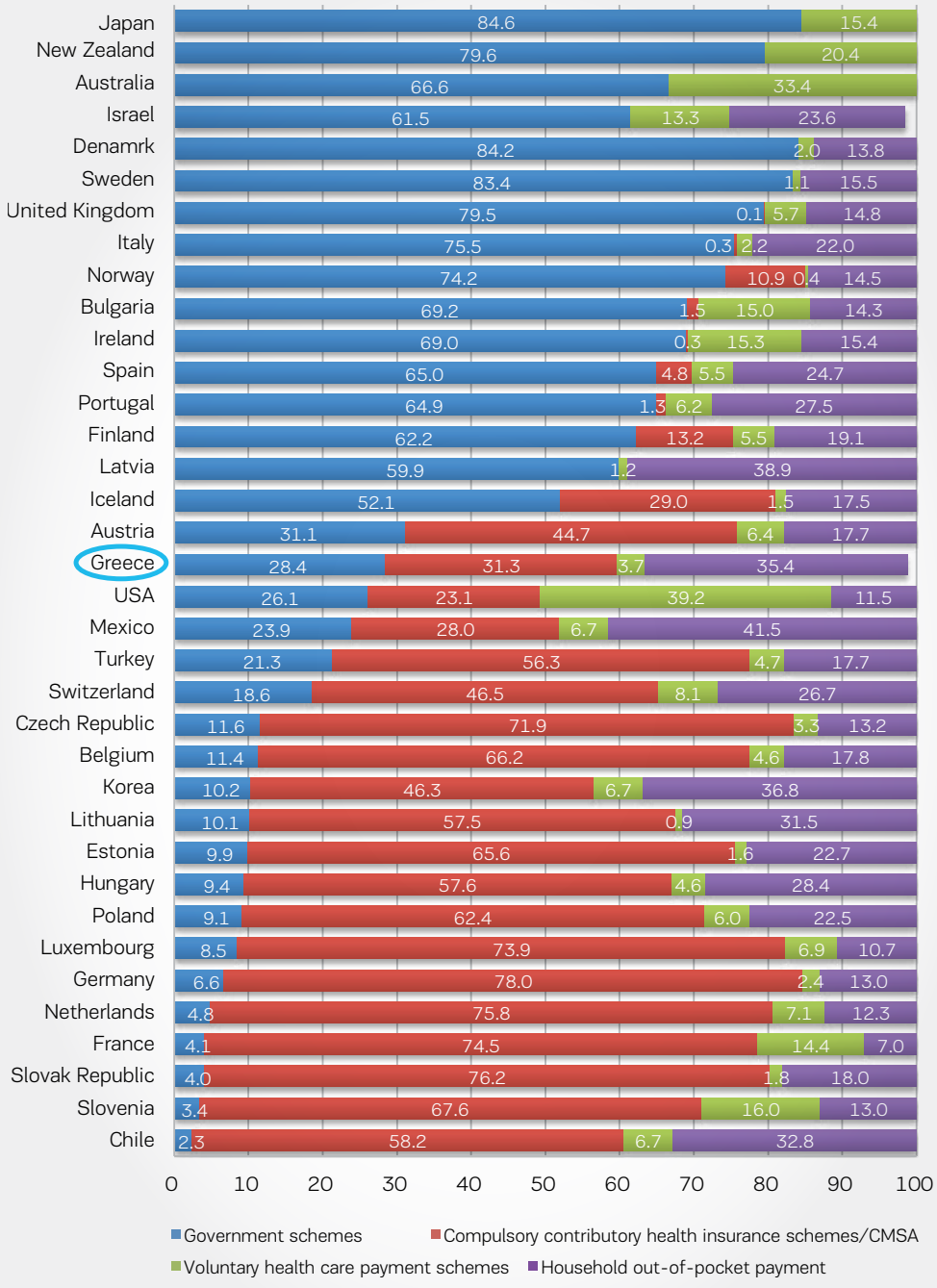


SOURCE: OECD Health Statistics 2016
* The EU refers to the average of 23 EU countries, due to unavailability of data for other countries

Figure 29 demonstrates the contribution on total health financing by provider in OECD countries for 2014. In Greece, 28.4% of health expenditure is financed by the General Government, while the contribution by Social Security Funds increased to 31.3%.

7 Purchasing Power Parity

Figure 29: Contribution on Total Health Financing by provider in OECD countries 2014 (%)

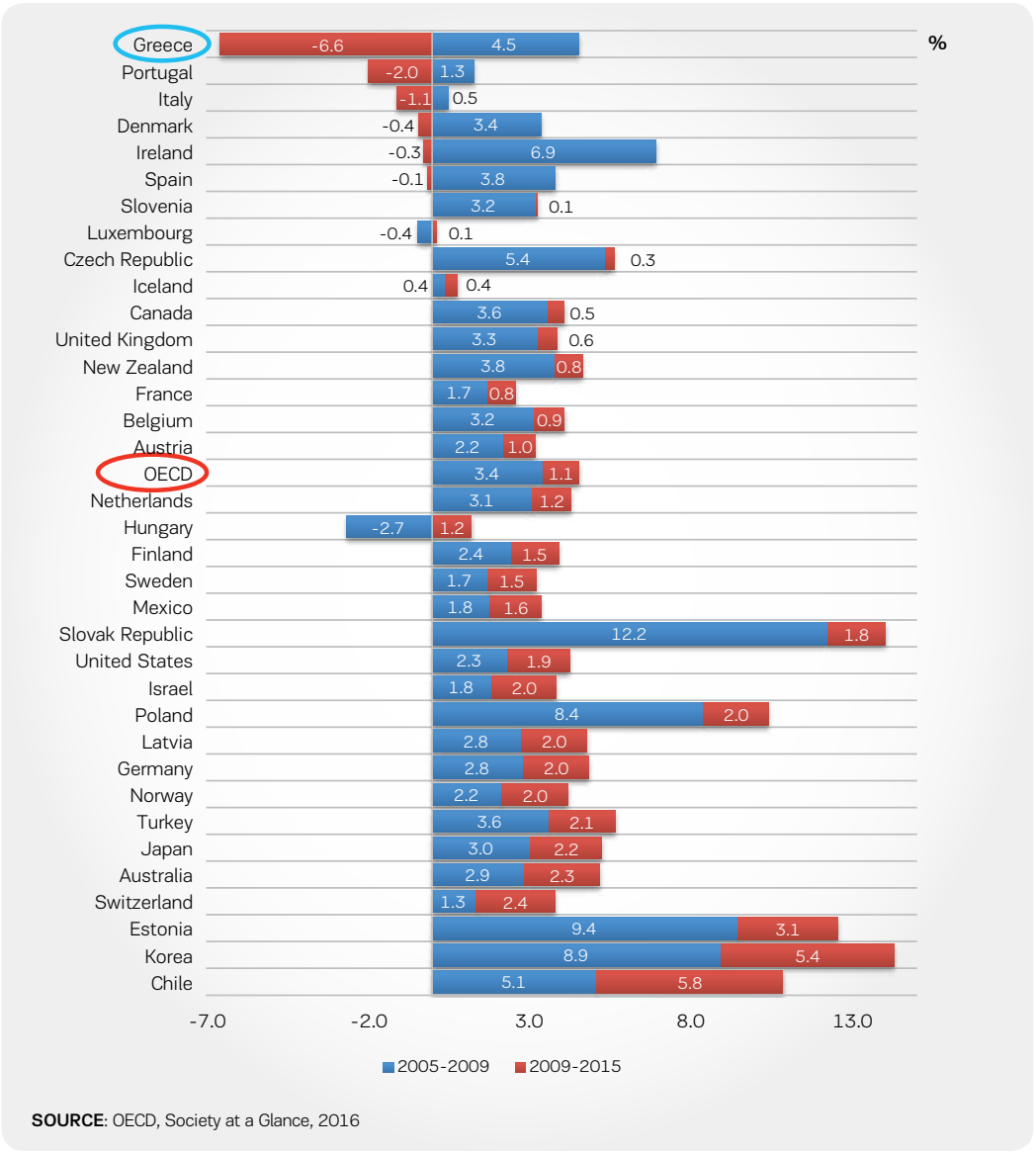


SOURCE: OECD Health Statistics 2016

6.3 WELFARE SPENDING AND PUBLIC PHARMACEUTICAL EXPENDITURE

During 2005-2009, social protection expenditure increased by 4.5%, ranking Greece 8th among OECD countries, where the average increase was 3.4% over the same period. This course radically reversed in 2009-2015, when social protection expenditure fell by -6.6% in Greece, recording the strongest decline among OECD countries. It is worth noting that except from the countries that have implemented fiscal adjustment programs the rest of the countries had a positive rate of change.

Figure 30: Change in Social Protection Expenditure in OECD countries (%)

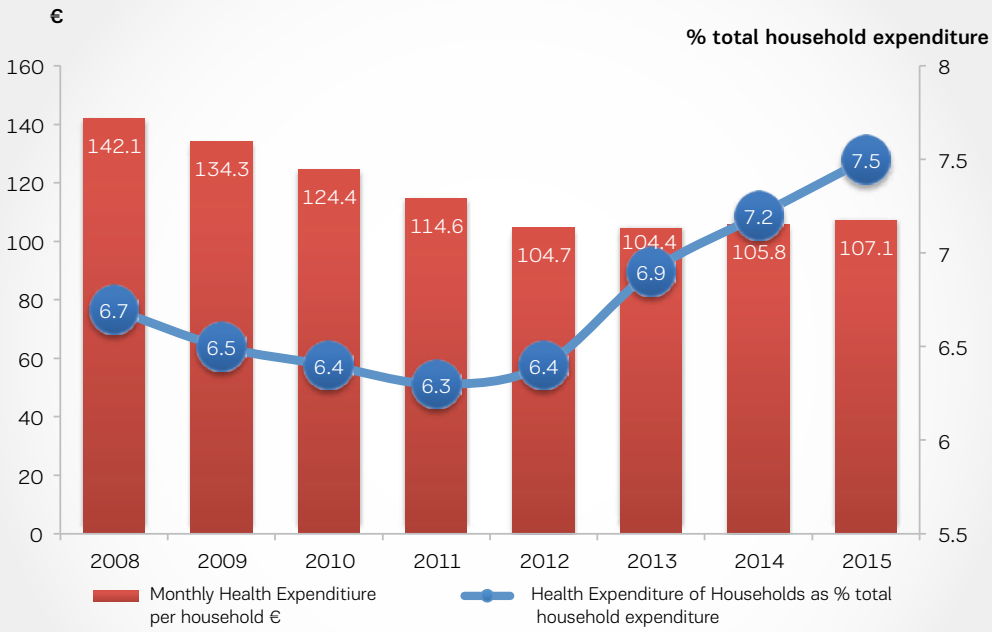


SOURCE: OECD, Society at a Glance, 2016

6.4 HEALTH EXPENDITURE AND PHARMACEUTICAL EXPENDITURE OF HOUSEHOLDS

In absolute terms, monthly health expenditure[8] of households was contracted by -21%, from €134.3 in 2009 to €107 in 2015. However, this accounted for 7.5% of total household expenditure compared to 6.5% in 2009, indicating their reduced purchasing power and the increased participation of patients in health expenditure through out of pocket payments.

Figure 31: Monthly Households Health Expenditure 2008-2015 (%)

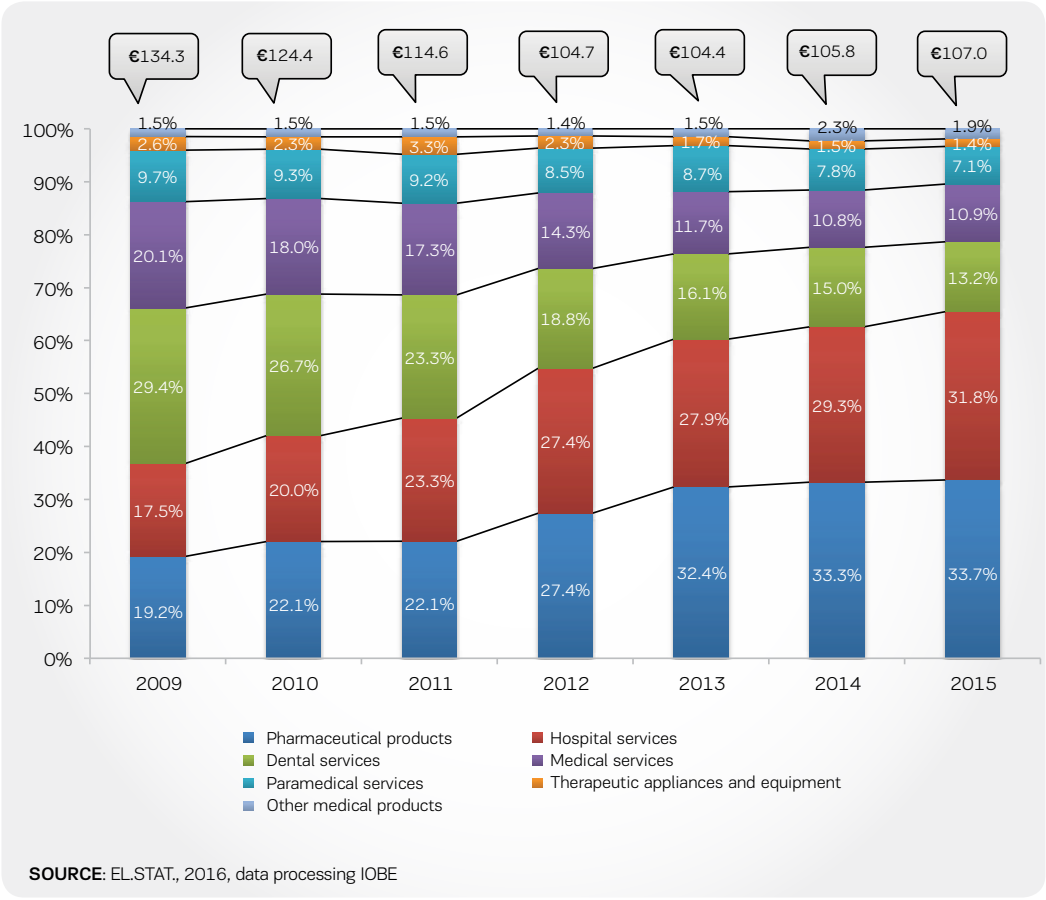


SOURCE: EL.STAT., 2016, data processing IOBE

8 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.

As shown in Figure 32 during the period of economic crisis, there was a shift of house health expenditure, mainly to pharmaceuticals and hospital care. Specifically, from €107 monthly health expenditure per household, 33.7% refers to pharmaceuticals, 31.8% to hospital services, 13.2% to dental services and 10.9% to other medical services.

Figure 32: Breakdown of Monthly Household Health Expenditure 2009-2015 (%)

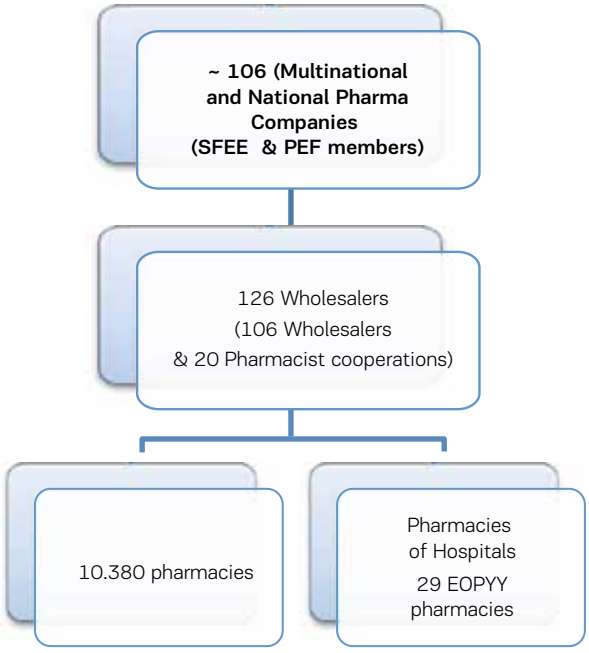


SOURCE: EL.STAT., 2016, data processing IOBE

7 THE SUPPLY SIDE: PHARMACEUTICAL INDUSTRY AND ECONOMY

Production and distribution of pharmaceuticals is one of the most dynamic sectors of the Greek economy. In 2015, according to Eurostat, approximately 13.1 thousand people were employed in the manufacturing of medicinal products (employees of the wholesale sector are not included), making the pharmaceutical industry a vital growth factor in Greece.

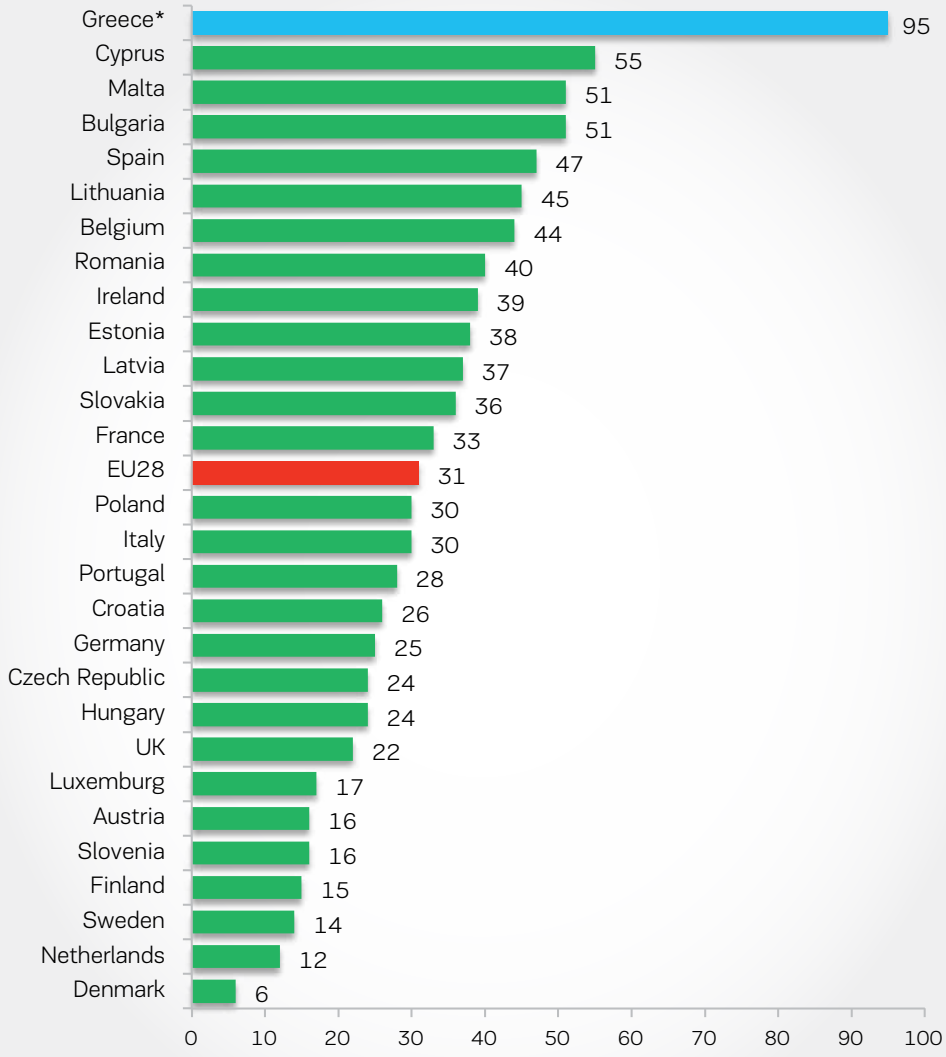
The supply chain for pharmaceutical products is comprised of pharmaceutical companies (both manufacturers and importers), wholesalers (both storage and distribution) and pharmacies. All medicinal products are distributed through wholesalers to pharmacies, except products for hospital use, which are provided through sales to hospitals. Direct sales to pharmacies are permitted, as long as pharmacies accept the respective payment policies of the companies. In some occasions, doctors or pharmaceutical companies are allowed to supply patients directly upon approval by the Social Insurance Fund.



SOURCE: EL.STAT. EOPYY, PanHellenic Association of Pharmaceutical Wholesalers

With a pharmacy density of 95 pharmacies per 100,000 inhabitants, Greece 1st among the average of the EU-28 of 31 pharmacies per 100,000 inhabitants.

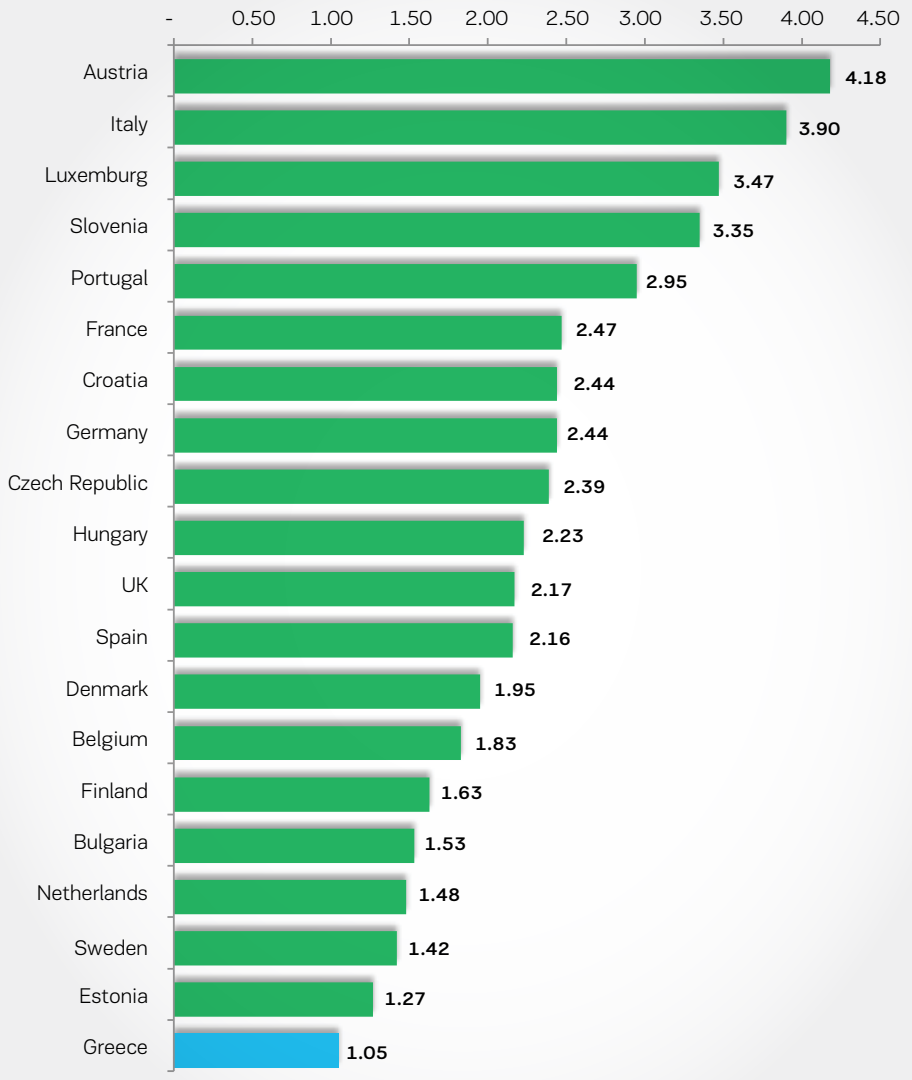
Figure 33: Number of pharmacies per 100,000 inhabitants EU28 (2015)



Source: ABDA, German Pharmacies, Figures Data Facts 2016, EL.STAT.,2016
* Data for Greece come from the latest available ELSTAT data.

Regarding the number of pharmacists per store, in Greece the corresponding ratio is about 1 pharmacist per pharmacy. The highest ratios are seen in Austria and in Italy, with about 4 pharmacists per pharmacy, while these countries have relatively low density of pharmacies, 16 and 30 pharmacies per 100,000, respectively. Generally, countries with the highest number of pharmacists per pharmacy exhibit the lowest density of pharmacies.

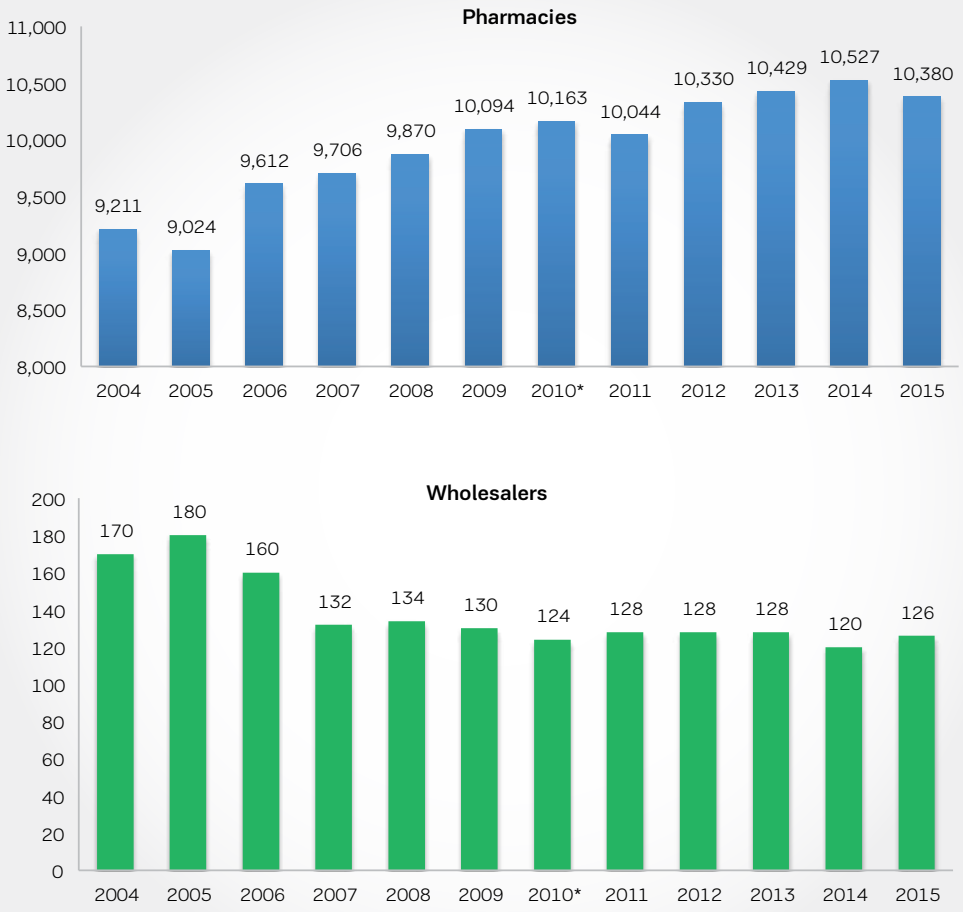
Figure 34: Number of pharmacists per pharmacy in EU28 (2015)



SOURCE: PGEU, Annual Report 2015

In 2015, 10,380 pharmacies operated in Greece out of which 3,739 pharmacies (36.0%) were located in the Region of Attiki. In comparison with 2014, total number of pharmacies in Greece recorded a decrease of -1,4%. The number of wholesalers in 2015 amounted to 126 in comparison to 120 in 2014, recording an increase of 5%.

Figure 35: Number of pharmacies and wholesalers in Greece (2004-2015)



SOURCE: EL.STAT.,2016 *Preliminary data

EOPYY Pharmacies

EOPYY initially operated 5 pharmacies in Attica region and 1 in Thessaloniki, supplying high cost medicines for serious diseases (Law 3816/2010) without copayment and without the confirmation of the prescription by the relevant social security fund (except 2 month). Currently, 29 pharmacies of EOPYY are in operation. In other parts of the country, insured citizens can obtain medicines of the 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 medicines that fall under the provisions of L.3816/2010 were split into two distinct lists. The first list relates to pharmaceutical products that are for hospital use only, while the second list includes 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 follow the way of pricing applied under the provisions set by the Ministry of Health.

By 2015, the majority of medicines of Law 3816/2010 were provided by EOPYY and hospital pharmacies.

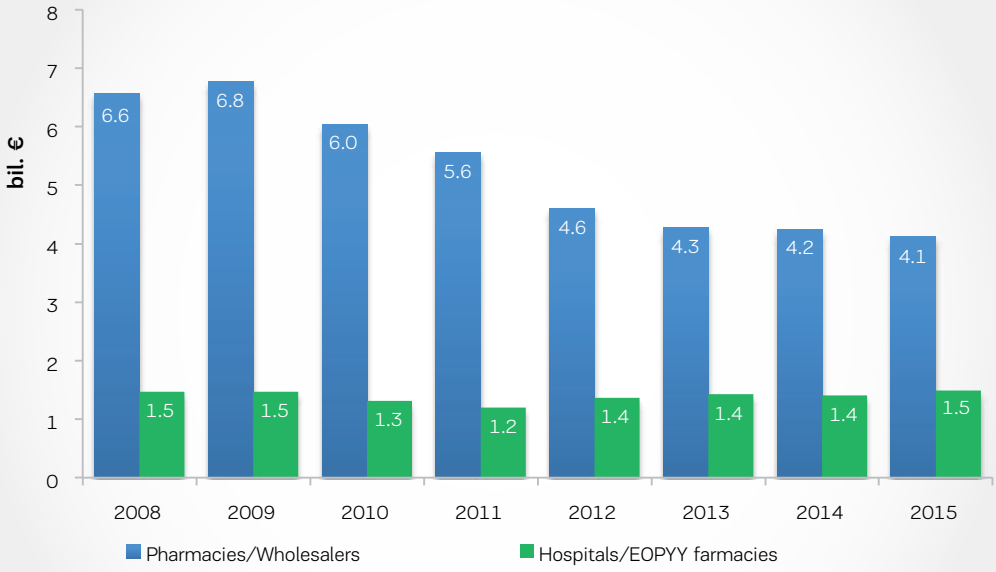
Since January 2016, under the new legislative regulation for hospital clawback (N. 4354 / 12.16.2015, Section D, Article 41), medicines of the Law 3816/2010 for hospital use only (Annex 1A) are exclusively administered from pharmacies in public hospitals.

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

7.1 SALES

Sales of medicinal products to pharmacies/wholesalers amounted to €4.1 bil. in 2015[9], showing a reduction of -2.7% compared to previous year. On the contrary, sales to hospitals amounted to €1.5 bil. in 2015 presenting an increase of 5.7% compared to previous year. Approximately, 73.5% of total sales were supplied to pharmacies/wholesalers[10], while the remaining 26.5% to hospitals EOPYY pharmacies.

Figure 36: Pharmaceutical sales in Greece 2008-2015 (bil. €)

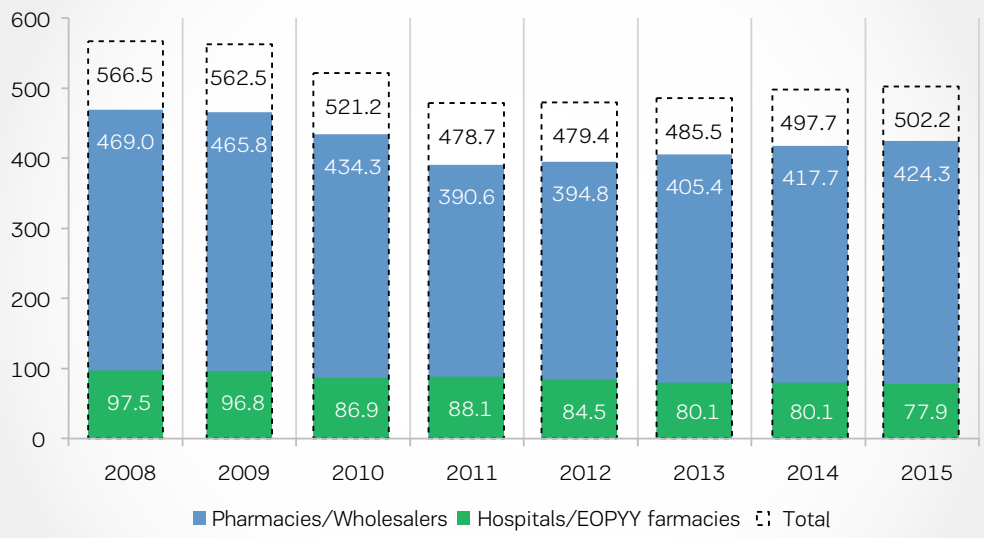


SOURCE: EOF 2016 (Pharmacies/Wholesalers at retail prices and Hospitals at hospital prices)

9. 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.
10. Parallel exports in 2014 were €306.7 mil. and are included here.

Regarding the number of packages, an increase of 0.9% was recorded in 2015 compared to 2014 (502.2 mil. packages), increase of 1.6% in pharmacies/wholesalers and decrease of -2.6% in hospitals/EOPYY pharmacies.

Figure 37: Pharmaceutical sales in Greece 2008-2015 (mil. packages)

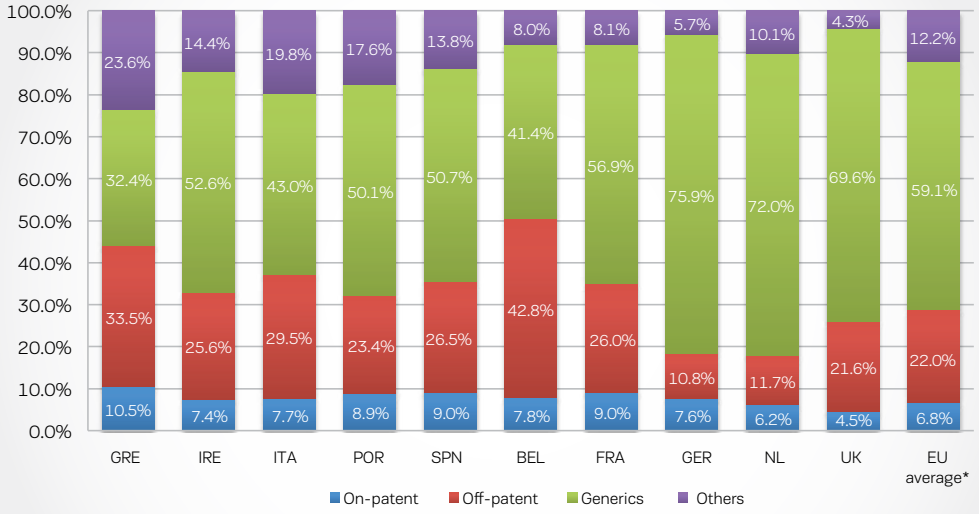


SOURCE: EOF 2016 *Possible smaller packaging replacements

Pharmaceutical products can be classified according to their patent protection status. According to IMS (MAT02/2016) the penetration rate of patent protected medicinal products (on patent) in terms of volume account for 10.5% of the market, which is higher than the average of other European countries (6.8%) which can be partly justified by significantly lower prices in Greece compared to other EU countries (€0.82 per unit on average compared to €1.84).

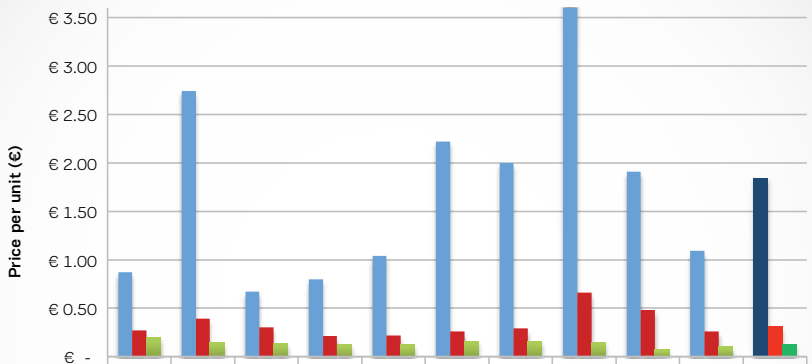
Respectively, the market share of non-protected pharmaceutical products (off-patent 33.5% & generics 32.4%) amounted to 65.9% in 2016 showing an upward trend compared to previous years (Figure 38). It is worth noting that the penetration rate of generics has increased by 3.7% since 2014.

Figure 38: Penetration of pharmaceuticals in volume per patent status in EU 2016 (%)



SOURCE: IMS, MIDAS 12/2016, Note: Includes only retail sales for all countries

Figure 39: Prices per unit in different EU countries 2016 (€)

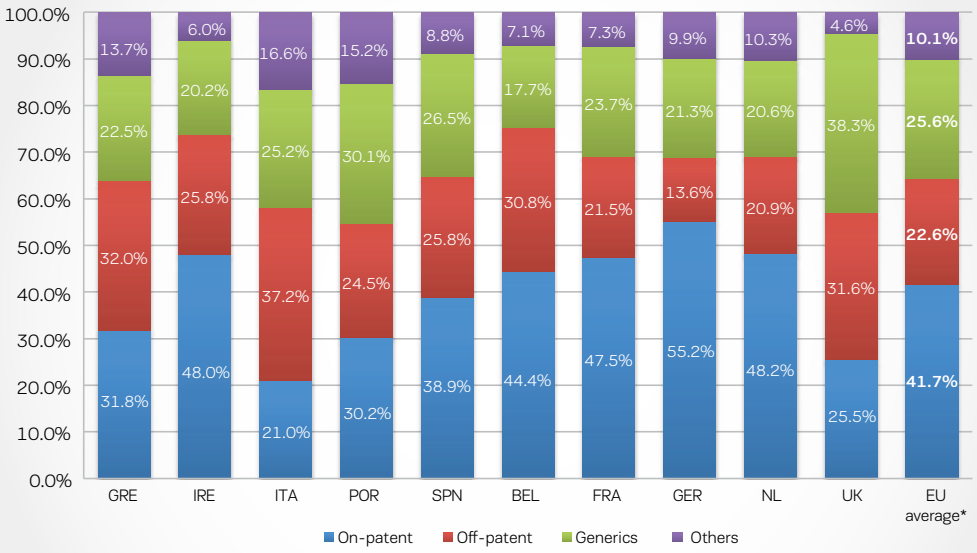


	GRE	IRE	ITA	POR	SPN	BEL	FRA	GER	NL	UK	EU average*
On-patent	€ 0.87	€ 2.74	€ 0.67	€ 0.80	€ 1.04	€ 2.22	€ 2.00	€ 3.80	€ 1.91	€ 1.09	€ 1.84
Off-patent	€ 0.27	€ 0.39	€ 0.30	€ 0.21	€ 0.22	€ 0.26	€ 0.29	€ 0.66	€ 0.48	€ 0.26	€ 0.31
Generics	€ 0.20	€ 0.15	€ 0.14	€ 0.13	€ 0.12	€ 0.16	€ 0.16	€ 0.15	€ 0.07	€ 0.10	€ 0.13

SOURCE: IMS, 12/2016 Note[1]: 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, the Netherlands, the UK, Finland, Norway, Sweden, Austria, Czech Republic, Hungary Poland and Slovakia

In order to have a more holistic picture of the market, we should also look at the market shares of pharmaceutical products based on the protection status and in terms of value. In other words, what is the impact on the expenditure caused by the respective volumes mentioned above.

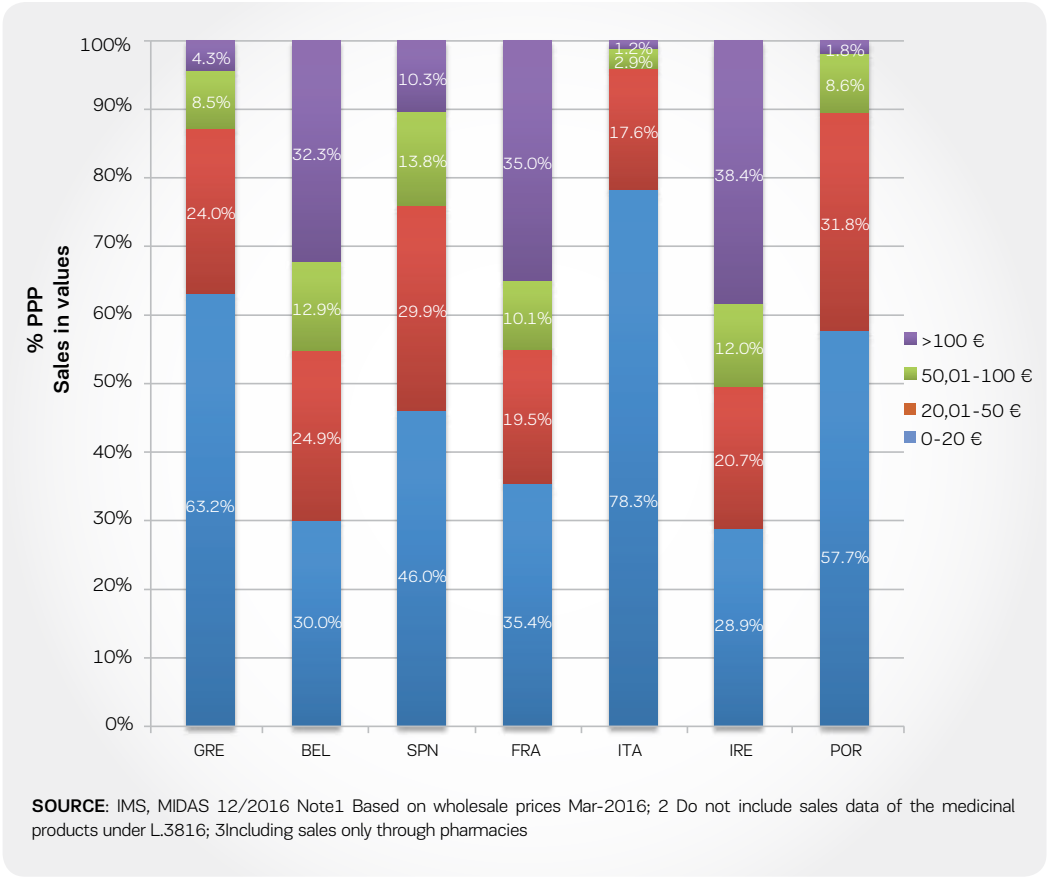
Figure 40: Penetration of pharmaceuticals in values per patent status in EU 2016 (%)



SOURCE: IMS, MIDAS 12/2016

In Greece, prescription drugs with wholesaler price ≤ € 20 comprise the largest part of the market with 63.2%, while only 4.3% have a wholesaler price greater than 100 €, following corresponding structure in Portugal (57.7% and 1.8% respectively) and Italy (78.3% and 1.2% respectively).

Figure 41: Sales distribution of pharmaceuticals based on wholesaler price in different EU countries 2016 (%)

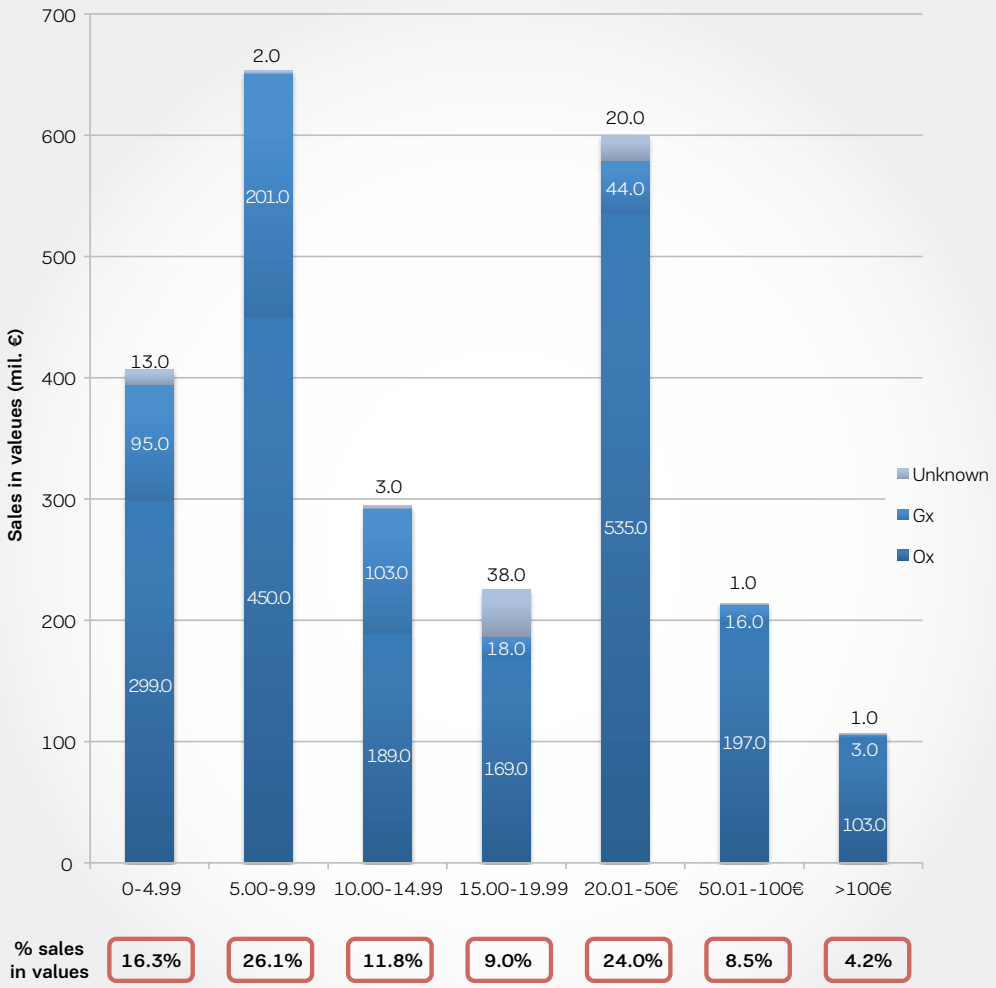


SOURCE: IMS, MIDAS 12/2016 Note1 Based on wholesale prices Mar-2016; 2 Do not include sales data of the medicinal products under L.3816; 3Including sales only through pharmacies

In particular, drugs with wholesaler price from € 5,00 to € 9,99, represent 26,1% of sales in terms of value, followed by drugs with a wholesaler price of less than € 5,00 (16,3%).

The following figure depicts the full distribution of prescription drugs, based on the wholesaler price and the percentage of sales in terms of value.

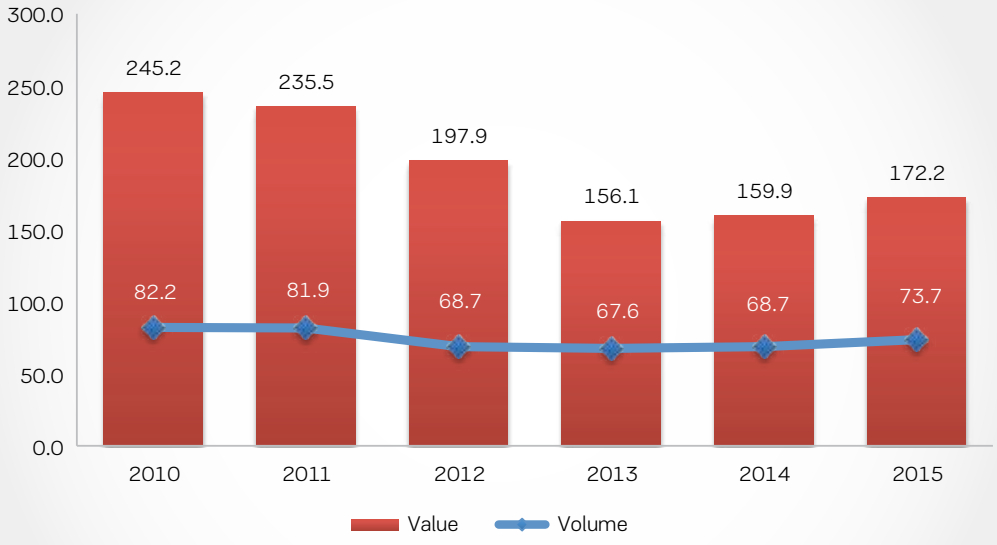
Figure 42: Sales distribution of pharmaceuticals per patent status based on wholesaler price in Greece 2016



SOURCE: IMS, MIDAS 12/2016 Note 1Bidder prices in September 2016; 2 Do not include sales data of the medicinal products under L.3816? 3 Including sales through retail pharmacies only

The market of OTC followed an upward trend during the period of economic crisis, both in terms of volume and valuesduring the period 2010-2015.

Figure 43: Sales of OTC in value and volume 2010-2015 (mil. € and mil. packages)



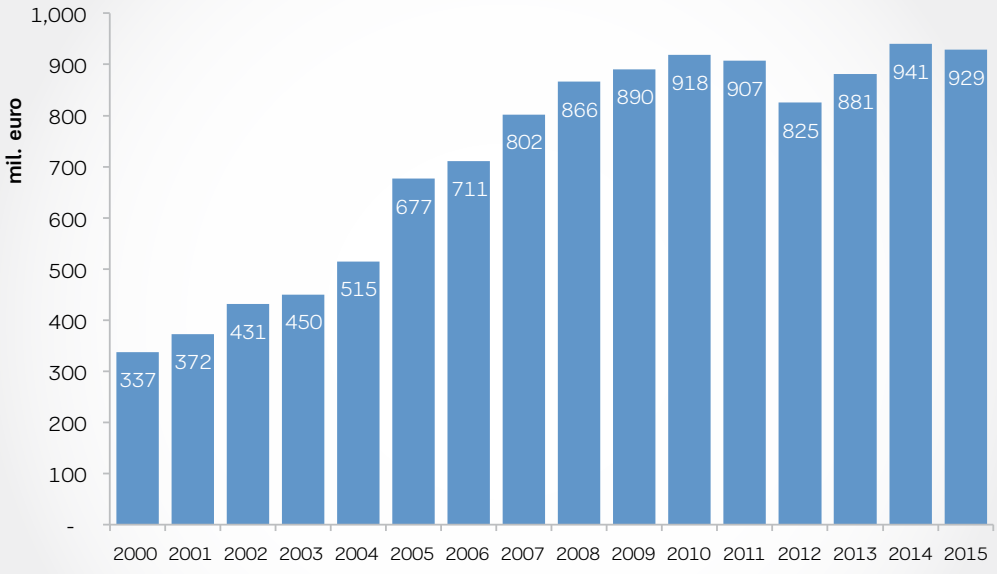
SOURCE: EFEX, 2016
Note: Depending on the source of information used, there may be deviations over EFEX-AESGP data.

The General Distribution Medicines (GEDIFA), a subset of O.T.C, (216 of the total 1,582 O.T.C) will be available outside pharmacies and concern analgesics, antipyretics, antipruritic, topical medications, laxatives (to treat constipation) and mouthwashes.

7.2 PRODUCTION

According to Prodcom database (Eurostat) in terms of value (ex-factory prices), pharmaceutical production in Greece was estimated at €929 mil. in 2015, approximately 1.2% lower than in 2014.

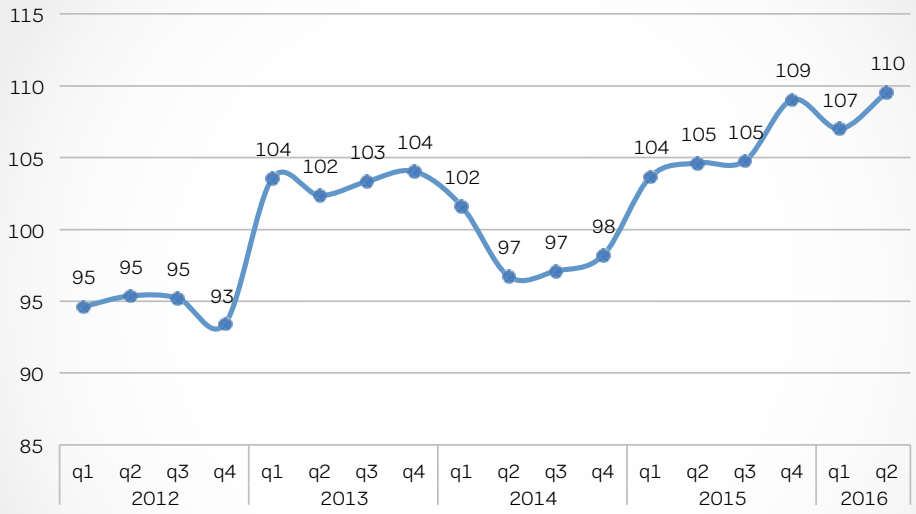
Figure 44: Evolution of domestic production of pharmaceuticals (mil. €)



SOURCE: Eurostat 2016, PRODCOM Database. *Any changes based upon review of data from Eurostat

Production of pharmaceuticals in Greece increased in the late 2015 and in the first half of 2016, as the industrial production index is close to 110 units compared to 106 on average in 2015. It is noted that in the first 6 months of 2016, the index is increased by 4.0% compared to the same period of 2015.

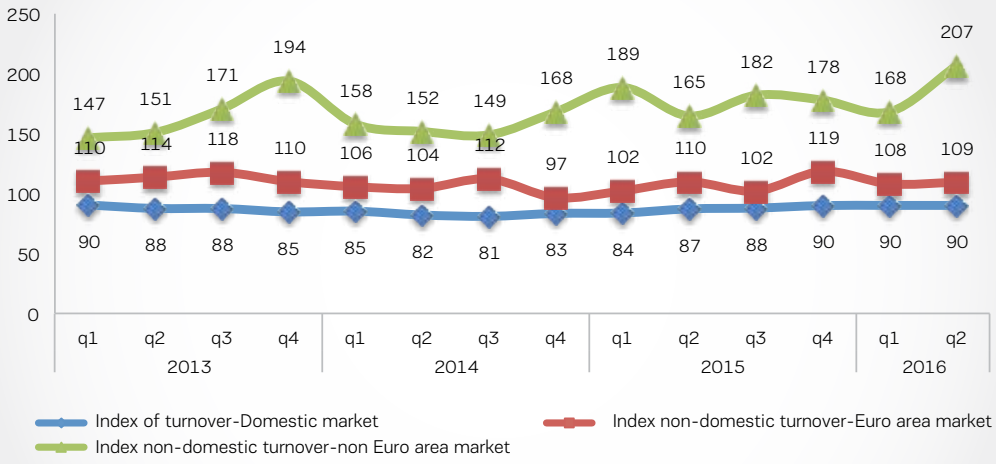
Figure 45: Industrial production index for pharmaceutical products (2010=100)



SOURCE: EL.STAT., 2016, seasonally adjusted and adjusted data by working days

The figure below shows the evolution of turnover index in pharmaceutical industry, as a proportion of the turnover in domestic market and as exports to Eurozone and non-Eurozone countries.

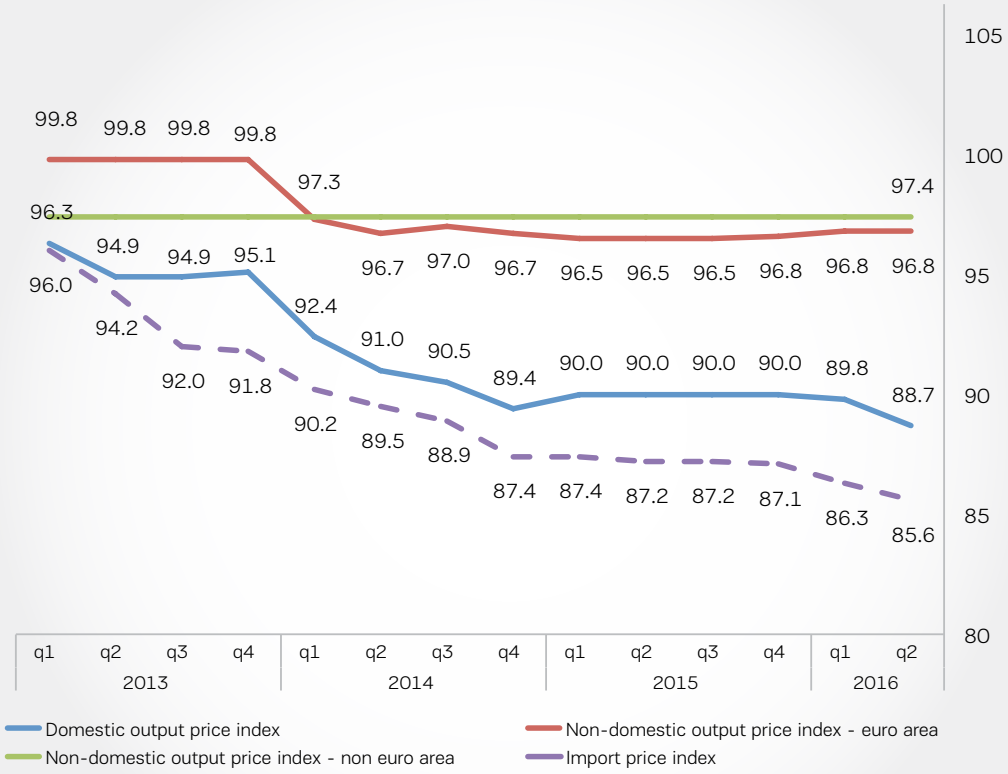
Figure 46: Turnover index in pharmaceutical industry (2010=100)



SOURCE: EL. STAT., 2015, seasonally adjusted and adjusted data by working days

The producer price index for the domestic market is lower in 2015 compared to previous years, while in 2016 marked a further decline, particularly in the second quarter. Instead, the producer price index for sales in Eurozone and outside of the Eurozone remains stable close to 97 units since 2014. Noteworthy is that producer prices for imported medicines follow a downward trend, with the index being formed at 85.6 points in the second quarter of 2016 compared to 87.2 points in 2015.

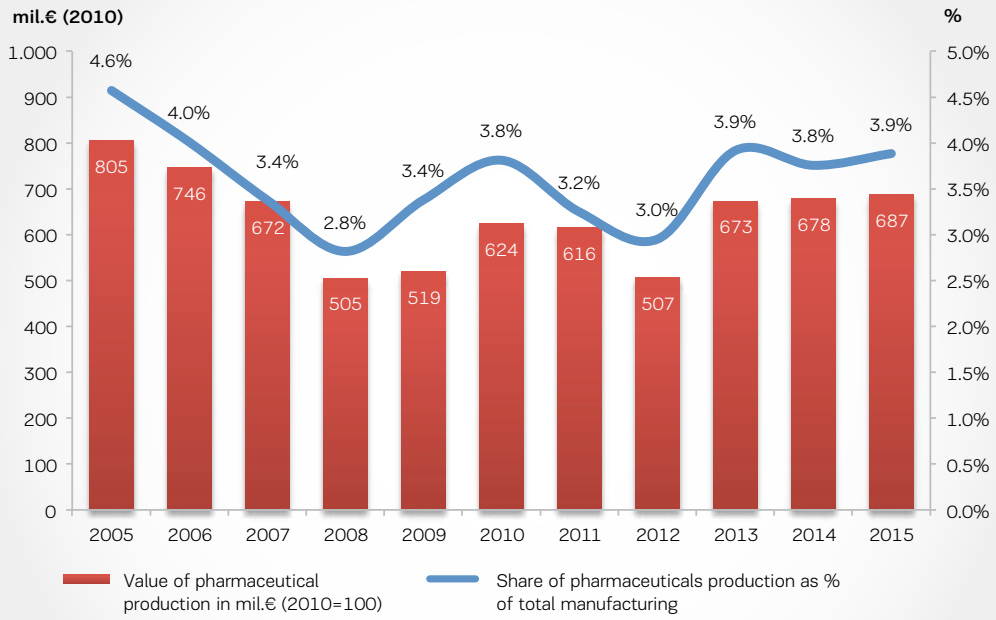
Figure 47: Producers price index (2010=100,0)



SOURCE: Eurostat, 2016, Non-seasonally adjusted data

The value of pharmaceutical sector (Figure 48) is formed at € 687 mil. in 2015, higher by 1.3% compared to 2014. The increase has shaped the industry's share at 3.9% in total manufacturing for 2015, ranking 8th among the 24 sectors of manufacturing (Table 6).

Figure 48: Production of pharmaceuticals on total manufacturing in Greece 2005-2015



SOURCE: Eurostat,2016, data processing IOBE*Any changes based upon review of data from Eurostat

Table 6: Distribution of different sectors on total manufacturing 2015 (%)

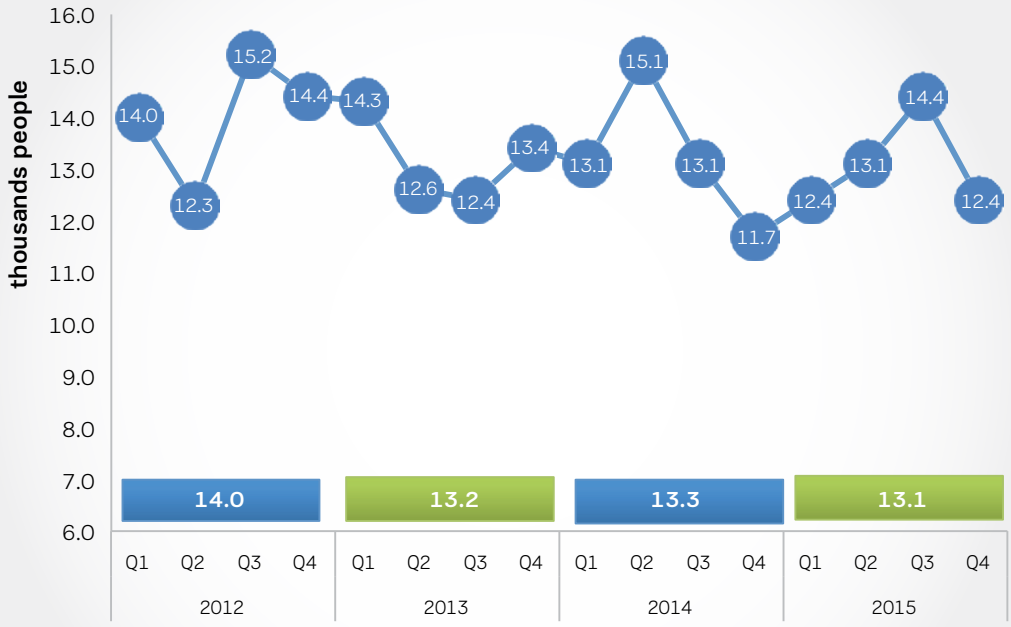
	Sectors of manufacturing	Share in total manufacturing 2015
1	C 10: Manufacture of food products	28.9%
2	C 24: Manufacture of basic metals	11.3%
3	C 25 Manufacture of fabricated metal products. except machinery and equipment	8.9%
4	C 20: Manufacture of chemicals and chemical products	7.0%
5	C 33: Repair and installation of machinery and equipment	5.2%
6	C 23: Manufacture of other non-metallic mineral products	5.1%
7	C 11: Manufacture of beverages	4.8%
8	**C 21: Manufacture of basic pharmaceutical products and pharmaceutical preparations**	**3.9%**
9	C 28: Manufacture of machinery and equipment n.e.c	3.4%
10	C 22: Manufacture of rubber and plastic products	2.7%
11	C 27: Manufacture of electrical equipment	2.4%
12	C12: Manufacture of tobacco products	2.4%
13	C14: Manufacture of textiles. wearing apparel	2.0%
14	C 26: Manufacture of computer. electronic and optical products	1.8%
15	C 19: Manufacture of coke and refined petroleum products	1.8%
16	C 13: Manufacture of textiles	1.4%
17	C 18: Printing and reproduction of recorded media	1.3%
18	C 32: Other manufacturing	1.3%
19	C 17: Manufacture of paper and paper products	1.2%
20	C 31: Manufacture of furniture	1.2%
21	C 30: Manufacture of other transport equipment	0.9%
22	C 29: Manufacture of motor vehicles. trailers and semi-trailers	0.5%
23	C 16 - Manufacture of wood and of products of wood and cork	0.5%
24	C 15: leather and related products	0.2%

SOURCE: Eurostat,2016, data processing IOBE*Any changes based upon review of data from Eurostat
* C 21: Manufacturers of basic pharmaceutical products and pharmaceutical preparations include only the companies active in the production of medicines and pharmaceutical preparations. In C 21 manufacturing companies are not included firms that belong to subsector 46.46 Wholesale of pharmaceutical products.

7.3 EMPLOYMENT

The European pharmaceutical industry is a high-tech sector offering employment to 725.000 people (estimations EFPIA Facts & Figures, 2016) and 3-4 times more indirect jobs in 2015. According to Eurostat, 13.1 thousand people were employed in the manufacturing of pharmaceutical products in Greece, demonstrating a slight decrease of -1.5% compared to 2014, and remained almost unchanged between 2013-2015.

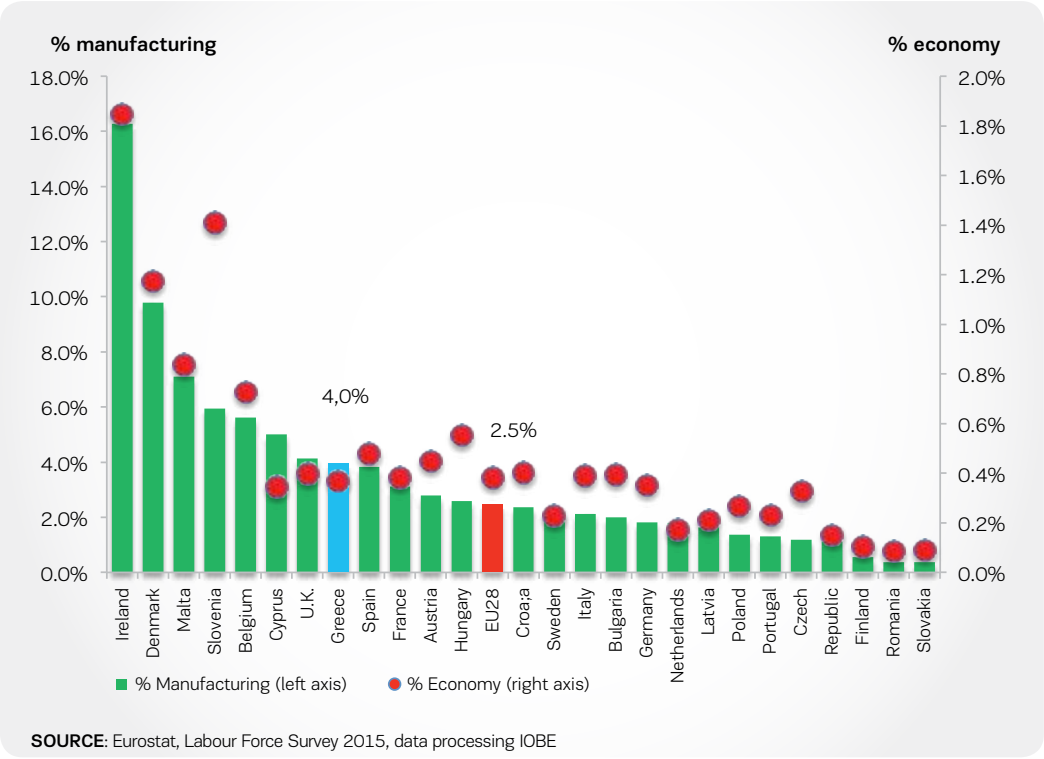
Figure 49: Employment in the manufacturing of pharmaceutical products in Greece 2012-2015



SOURCE: Eurostat, 2016

Employment in manufacturing of pharmaceutical products represents 0.4% of total employment in the Greek economy, and 4.0% with regards to employment in the manufacturing sector overall. Employment in manufacturing sector in Greece is higher than the respective average in EU28 (2.5%). Due to the significant increase in the second quarter of 2016 in Greece, employment in the total economy stood at 0.5% and in the manufacturing sector at 5%. It is worth noting that Ireland has the highest share in Europe, followed by Denmark.

Figure 50: Employment in the manufacturing of pharmaceutical products in EE 2015



SOURCE: Eurostat, Labour Force Survey 2015, data processing IOBE

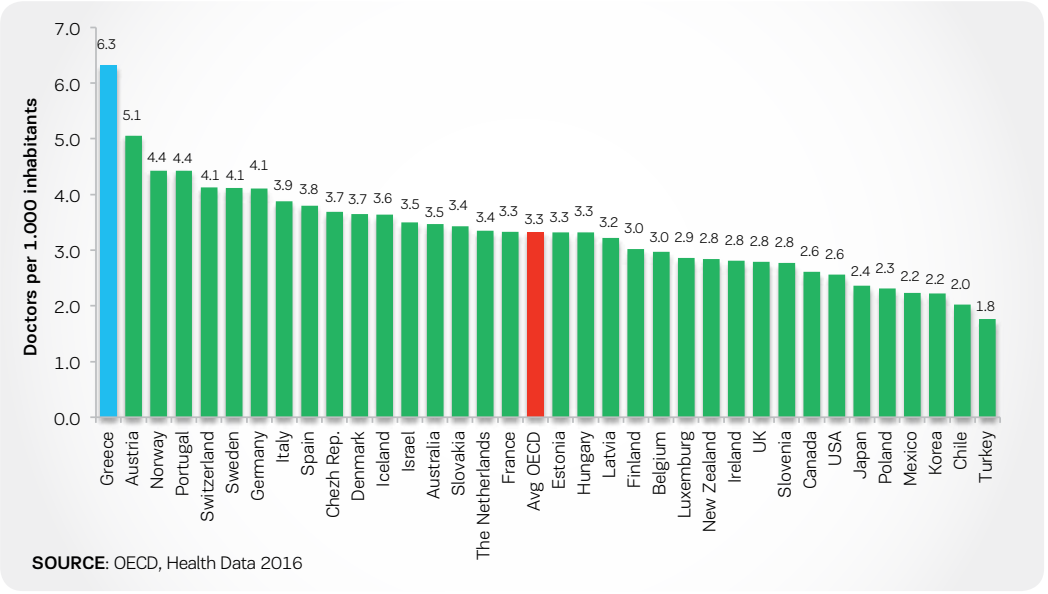
Table 7: Number of employed in health care sector per specialty

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Doctors	62,207	67,540	69,030	69,265	69,435	69,215	68,886	68,807	68,401
Dentists	14,429	14,689	14,774	14,661	14,518	14,208	13,911	13,746	13,301
Pharmacists	9,802	10,595	10,788	11,160	11,232	11,196	11,461	11,579	11,299
Nurses	37,718	38,291	37,306	38,422	38,530	36,883	36,103	35,223	-
Physiotherapists	-	3,881	4,521	5,118	5,582	6,097	6,629	6,800	7,213

SOURCE: OECD, Health Data 2016, EL.STAT., 2016

In 2015, Greece had the highest number of doctors per capita (6.3 per 1,000 inhabitants), compared with the average of OECD countries (3.3).

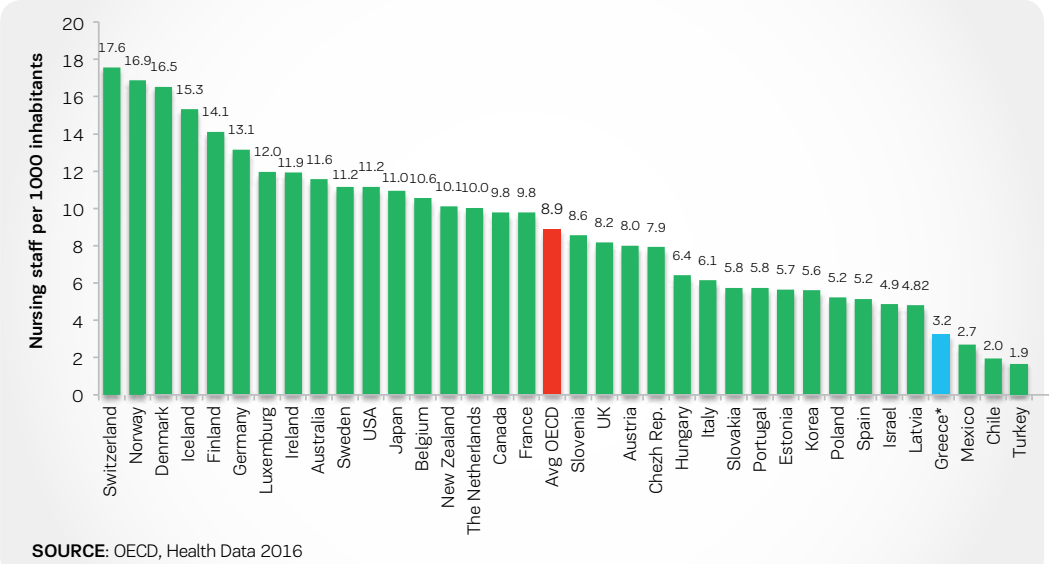
Figure 51: Doctors per 1,000 inhabitants in OECD countries 2015



SOURCE: OECD, Health Data 2016

It is worth noting the low ratio of nurses per capita in Greece, 3.2 nurses per 1,000 inhabitants, while the average for OECD countries is 8.9 nurses per 1,000 inhabitants.

Figure 52: Nurses per 1,000 inhabitants in OECD countries 2015



SOURCE: OECD, Health Data 2016

An important measurement for employement 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, the pharmaceutical industry recorded a decline of employment in FTEs of -6.2% during the period 2010-2015. However, pharmaceutical industry showed a milder decline in employment compared to total manufacturing (-21.5%) and to the total economy (-14%), indicating that employment in the pharmaceutical industry shows inflexibility while is dominated by employees of the highest education level. Simultaneously, the total wage cost remained almost unchanged compared to much larger decline in manufacturing (-34.4%) between 2010-2015. At the same time, the average hourly wage stood at € 11.7 for the pharmaceutical industry compared to €6.8 in total manufacturing and €5.2 in the total economy. These data indicate that the pharmaceutical industry can be an important part of a new development model, with production of high value added products and exports, as observed in other countries (Ireland).

Table 8: Change in employment and wages 2010-2015

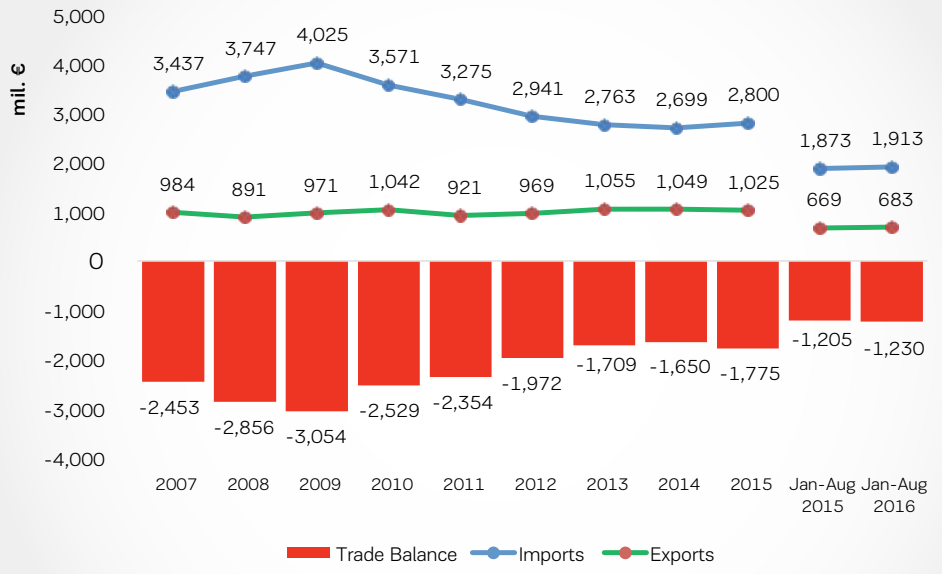
	Employment % change (FTE)	Compensation of employees	Average hourly wage (2014)
Total Economy	-14.0%	-33.3%	5.2€
Manufacturing	-21.5%	-34.4%	6.8€
Pharmaceutical production	-6.2%	-0.04%	11.7€

SOURCE: Eurostat, National Accounts, 2016, data processing IOBE

7.4 EXTERNAL TRADE

The pharmaceutical industry is also an important driver for the country's external trade. Imports and exports of medicinal products amounted to €2.8 bil. and €1.0 bil. in 2015, respectively. Compared to 2014, imports increased by 3.7%, while exports decreased by -2.3% resulting in an increase of 7.6% in the deficit (-€ 1.8 bil. compared to -€ 1.7 bil. in 2014 in absolute numbers). In the first 8 months of 2016, a balanced expansion of exports and imports of 2.2% was recorded. Exports accounted for 4% of total Greek exports in 2015, with an upward trend in the first 8 months of 2016, and among manufacturing sectors (excluding mineral oils), pharmaceutical industry ranks 4th in 2015 with 7.0% of exports of total manufacturing. It is worth mentioning that based on data from the Panhellenic Exporters Association in 2015 medicinal products are the second exported product in terms of value, after mineral oils, based on the Standard International Trade Classification (SITC) in 5-digit resolution.

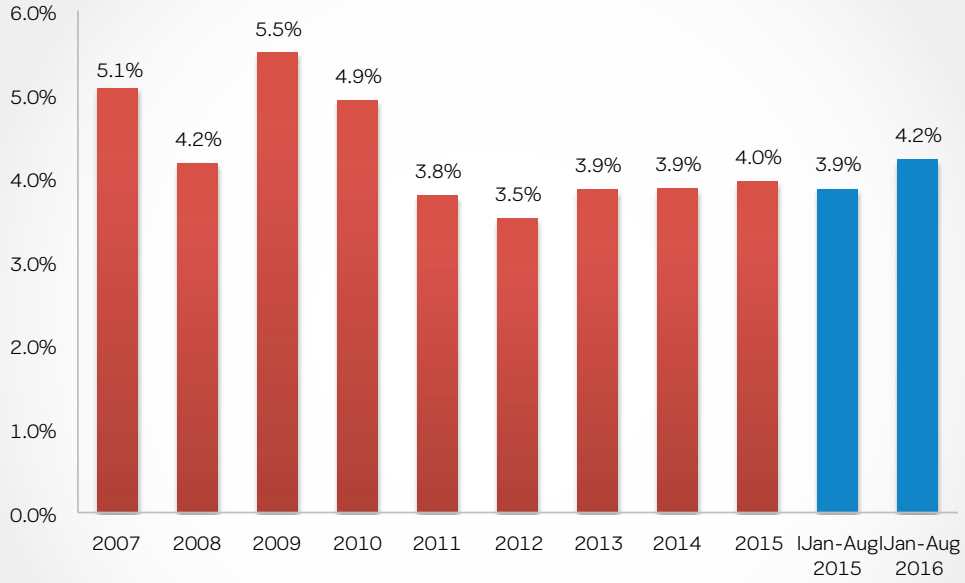
Figure 53: Evolution of trade balance for pharmaceutical products (mil.€)



SOURCE: Eurostat International trade, EU Trade Since 1988 By CN8, 2015. data processing IOBE

Regarding the most important trading partners in the category of pharmaceuticals, in the side of imports is Germany (27%), France (10.7%) and Switzerland (10%), while in the part of exports is Germany (18.8%), United Kingdom (14.8%) and Cyprus (7.9%). It should be noted that the Greek pharmaceutical industry imports from 61 countries and exports to 141.

Figure 54: Exports of pharmaceutical products in the total exports of Greece (%)

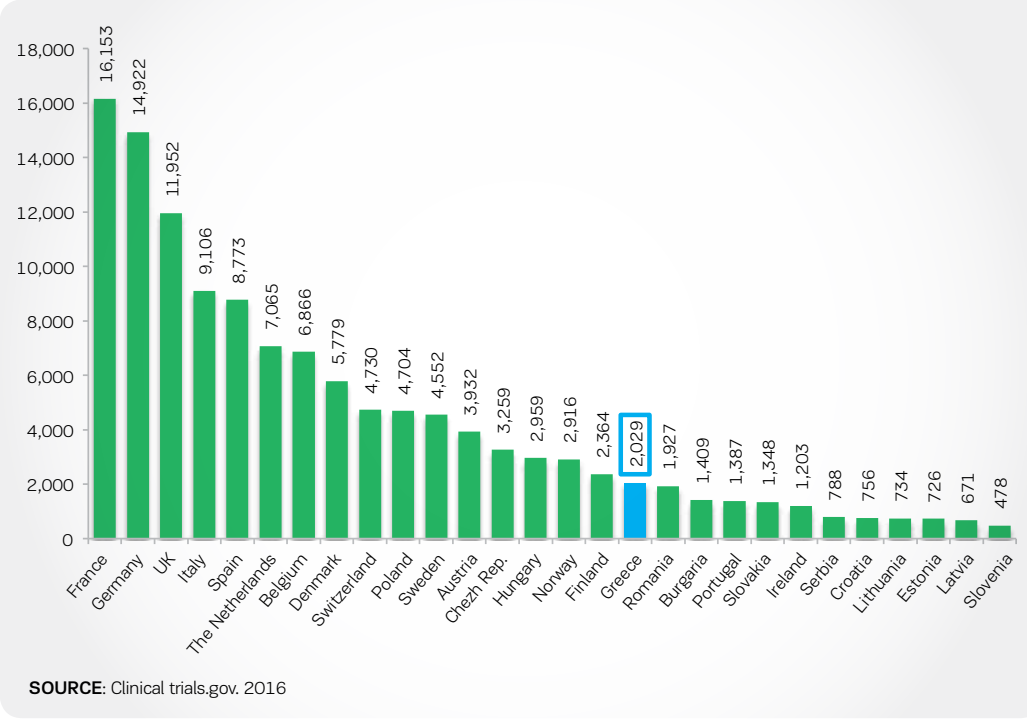


SOURCE: Eurostat International trade, EU Trade Since 1988 By CN8, 2015. data processing IOBE

7.5 RESEARCH AND DEVELOPMENT (R&D)

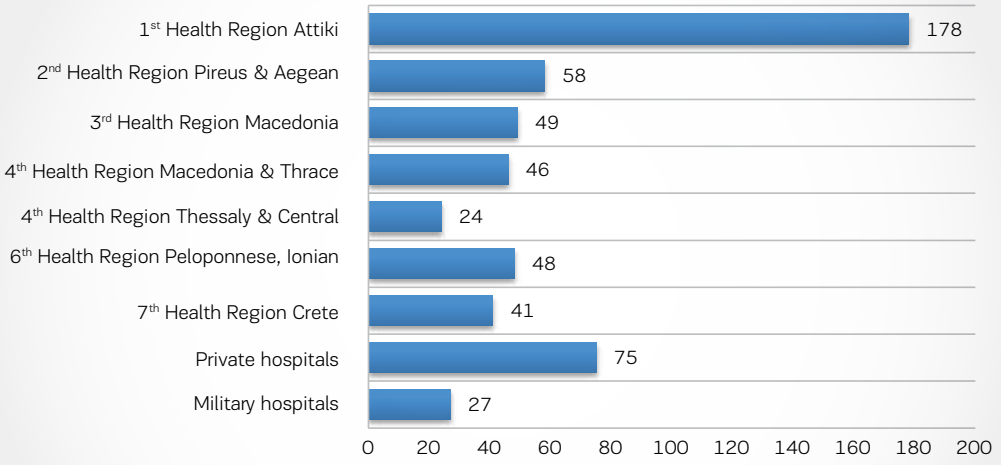
Greece ranked in the last places among EU countries with regards to the R&D investment, spending €100 mil. according to EOF estimations. With respect to the number of clinical studies conducted in 2014, irrespective of phase, it was found that 1.778 clinical studies were conducted in Greece, which is similar to that in countries such as Romania and far less than more research-intensive countries, such as France, Germany and United Kingdom.

Figure 55: Number of clinical trials irrespective of phase in EU 2016



SOURCE: Clinical trials.gov. 2016

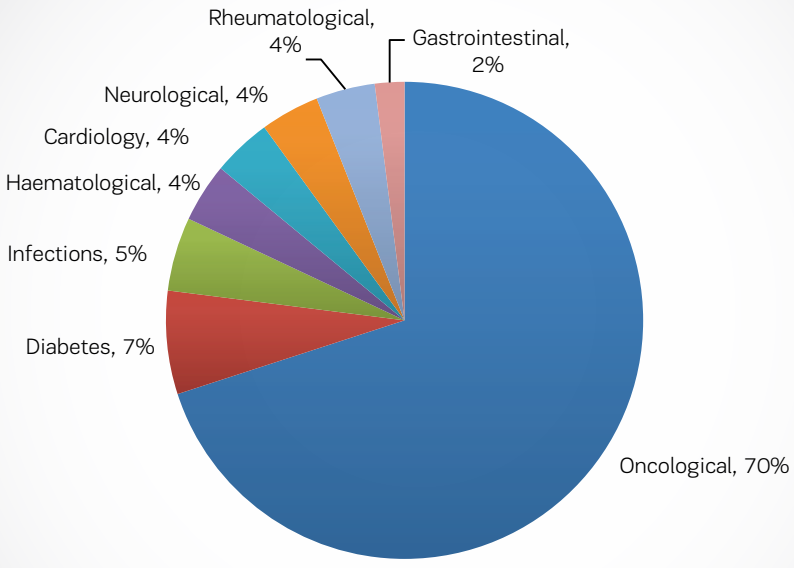
Figure 56: Number of clinical trials per health region in Greece 2015



SOURCE: GREDIS EOF 2016

In 2015, 70% of the clinical trials conducted in Greece concern oncology, while 5% concern infectious diseases.

Figure 57: Clinical trials per therapeutic category in Greece 2015



SOURCE: GREDIS EOF 2016

7.6 PRICING OF PHARMACEUTICAL PRODUCTS

Prices of medicinal products in Greece are set based on international reference pricing (IPR) system. Specifically, as set by the Law 4213, Chapter 4, art.22, prices for medicinal products are set based on the average of the 3 lowest prices in EU28. The above provisions are specified by ministerial decisions. During 2015-2016 there were not any significant changes in price setting.

Ministerial decision **GG3890/B/02.12.2016,** as described below, sets the provisions under which pricing of pharmaceutical products is currently set. Any intermediate provisions published within this year are presented in Table 11.

Maximum ex-factory price for **on-patent** products is based on the average of the 3 lowest prices (9-digit code EOF) in EU 28, where reliable data are published.

In order for a medicinal product to be priced for **the first time**, it needs to have been priced in at least three EU countries. In the absence of the same medicinal product in three EU countries, it will not be priced in Greece. Only **orphan medicinal products** may be priced even if prices are available in only two EU countries.

Medicinal products that have no sales during the last 3 years from the date of price approval or have no sales for three consecutive years after their first price list, will not be priced regardless of whether the license is revoked declaratory by EOF.

The maximum ex-factory price of off-patent products (those products that lost their patent protection), for which the first generic was introduced, is automatically reduced either by 50% of the last price the product held under when patent protection (wholesaler price is price when the first generic was introduced) or according to the average of the 3 lowest prices in EU, considering the lowest between the two options above, and by no means lower than the lowest price in EU.

For off-patent products for which there is no generic in the market during the last 12 months based on EOF sales, or there are not any similar products based on Article 10 of this ministerial decision (produced in Greece), the average of the 3 lowest prices in EU applies.

The price of generic products,, regardless of their approval date, retain 65% of the resulting price of the reference off patent, as it is formed based on the aforementioned.

In order to promote the use of less expensive treatments as well as for the protection

of public health, and in order not to undermine the adequacy of those products, limits in price reductions of off patent products, and respectively for their generics, are defined in a ministerial decision.

Price reductions resulting from price revision will not be greater than 10% of the wholesaler price. If the resulting price of the generic after the end of this process, is greater than the price of the off patent product, the protection of 10% will not apply and the price of generics will be determined at 65% of the resulting price of the off patent product.

The ex-factory price of biologics and bio-similar products is defined as the average of the 3 lowest prices in EU.

Exceptionally prices of blood derivatives may not be less than the average of the 3 lowest prices in EU. For public health reasons, blood products and vaccines are excluded from price revision. Furthermore, medicines available exclusively abroad (for export) are also excluded from price revision. Prices of hybrid products should not be greater than the prices of reference products belonging to the same ATC5 and have similar pharmaceutical form and content.

Also, for generic drugs with a retail price of more than € 12, dynamic pricing is applied.

Prices of medicinal products produced exclusively in Greece that cannot match with the pharmaceutical form or content of a off patent product in the domestic market (domestically produced) are set based on cost estimates, including production and packaging costs and administration - sales – proliferation costs, as determined by the relative tables calculated based on the average costs of the industry. The prices of medicinal products produced exclusively in Greece should not be greater than the prices of off patent products belonging to the same ATC5 and have a similar pharmaceutical form and content.

For the medicinal products that have undergone R&D on their active substance or their pharmaceutical form, signed as Greek patented invention, and which have undergone clinical pharmacokinetic studies and are authorized by EOF, the value of R&D investment on the active substance or the active substance or pharmaceutical form as well as the expertise, will be also considered in shaping the aforementioned cost estimate.

The maximum net profit rate is set at 8.5% and is calculated on the total cost excluding depreciation, interest and profit to third parties for jobbing.

The prices are revised downwards bi annually. Products included in the negative list and OTC do not follow price revision.

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. Gross profit margin (mark-up) a) for all medicinal products reimbursed by social security funds is set as a percentage of 4.9% on the ex-factory price (up to €200) and 1,5% on the ex-factory price (>€200) b) for OTC as a percentage of 7.8% on the ex-factory price and c) for medicinal products that belong to par.2, art.2, L3816/2010 as a percentage of 2% on hospital price. The latter is called as Special Wholesaler Price.

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, for pharmacies the mark up is determined as follows: a) 35% on the wholesale price for OTC b) 35% on the wholesale price for non-reimbursed prescription products c) for reimbursed products (see Table 6) and for products with price > €3.000 is set at 2%.

Ex-factory price: price at which medicinal products are sold by MAHs to wholesalers and is calculated based on the wholesaler price reduced a) for prescription medicinal products not reimbursed by the Social Insurance Funds by 5.4%, b) for prescription medicinal products reimbursed by the SSFs with price up to €200 by 4.67% and with a price exceeding €200,01 by 1,48% and c) for OTC by 7.8%.

Maximum Hospital Price: price at which medicinal products are sold by the MAHs to the State, State hospitals, Social Care Units, public law legal entities referred to in par. 1 of Article 37 of Law 3918/2011, pharmacies of private clinics with over 60 beds and EOPYY pharmacies. The maximum hospital price is determined on the ex-factory price reduced by 8.74%.

7.7 PHARMACEUTICAL PRODUCTS PRICE STRUCTURE

Profit margins of wholesalers vary depending on the reimbursement status of each product that is, on whether the product belongs in the positive, negative, OTC 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 belonging in the positive list (and therefore reimbursed by the social security funds) profit margins and the price structure are set as follows:

Table 9: Mark-up in the pharmaceutical supply chain 2016

	Reimbursed products with EXF < 200€	Reimbursed products with EXF > 200.01€	OTC	Negative list
Wholesalers	4,9%	1,5%	7,8%	5,4%
Pharmacies	Table 10	Table 10	35%	35%

SOURCE: M.D. (3890/2.12.2016)

Table 10: Profit margins of pharmacies 2016 (%)

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%

SOURCE: M.D. (3890/2.12.2016)

Mark-up margins mentioned above are the maximum margins allowed in the case of OTC for wholesalers and pharmacists, who may voluntarily provide these products in lower prices as long as it is recorded in the respective invoice.

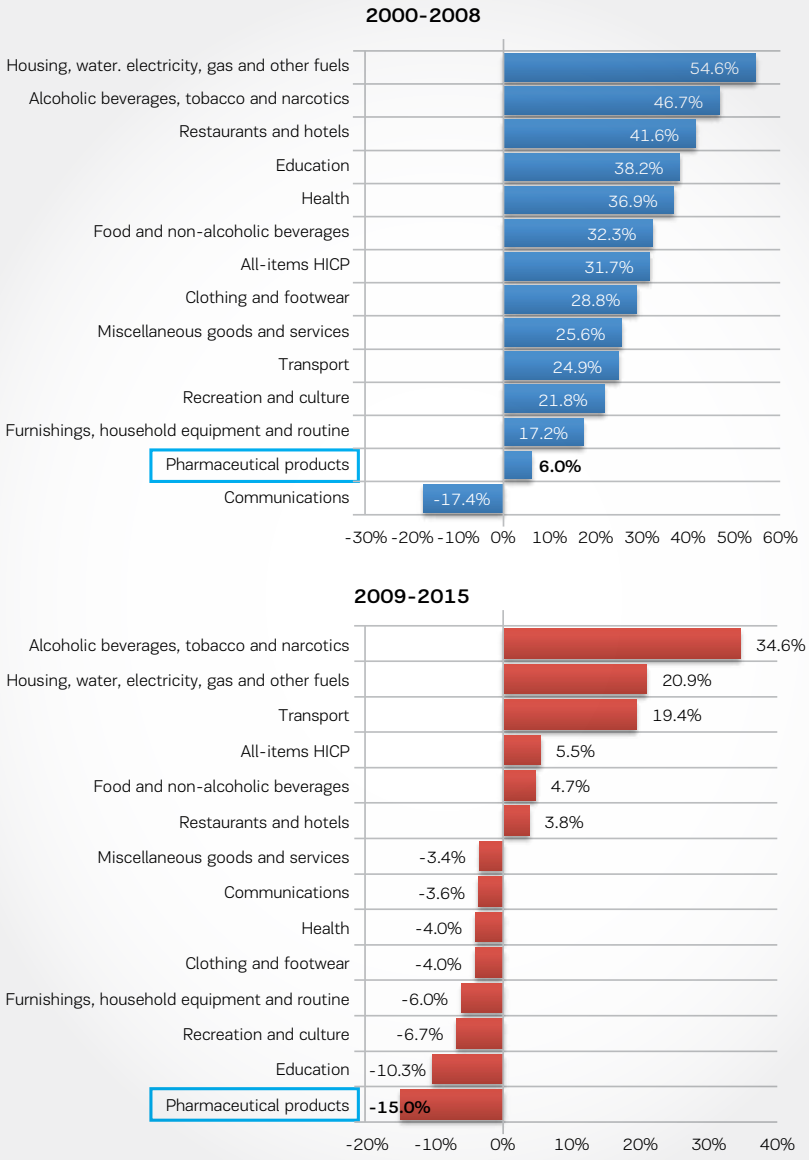
Additionally, these margins are applied to all reimbursed products sold in private pharmacies including products of L.3816/2010 list. When the latter are directly sold by private pharmacies and the respective cost is not reimbursed by EOPYY or any other SSF, pharmacist margin is set based on the table above and for products with wholesaler price greater than €3.000 at 2%.

According to the price structure of medicinal products, the current VAT at 6.0% and the respective profit margins in the supply chain (IMS elements 06/2016), the weighted average percentage of the final value attributable to the manufacturer lays at 69.9%, wholesaler at 3.4% and pharmacist at 21.2%

7.8 PHARMACEUTICAL PRICE INDEX

Between 2000 and 2008, prices increased by 6% presenting the lowest increase among categories of all goods, while between 2009 and 2015 price index for pharmaceutical products decline with greater intensity (-15%).

Figure 58: Annual % change of price index all goods by category all goods (2015=100)



SOURCE: Eurostat, Harmonised Indices of Consumer Prices (HICP), 2016 data processing IOBE

7.9 REIMBURSEMENT OF PHARMACEUTICALS

During the period 2015-2016 there have not been any significant legislative changes regarding reimbursement of medicinal products. Below are the most important legislative changes for pharmaceutical products in Greece (detailed in Table 11).

According to **LAW 4249, ARTICLE 127 (GG 73 / 03.24.2014),** Social Security Funds reimburse patent protected medicinal products that have received market authorization in Greece after 1.1.2012, if they are reimbursed in 2/3 of EU Member - States or in at least 12 EU member- states after a health technology assessment evaluation, provided full compliance with the Community EC Directive 89/105 / EG Directive on transparency. The Ministry of Health has the authority to exempt medicinal products characterized as essential for life threatening diseases or orphan drugs, only when followed by international clinical protocols. New generics are automatically included in the list if the off patent products are also included.

The positive list is prepared by EOF and after approval from the Minister of Health it is published in Government Gazette. Following either price revision or price approval of new medicinal products, positive list with the corresponding reimbursed prices must be reviewed and published within 30 days (GG64 / 01.16.2014).

For setting up, revision and completion of the reimbursement list, the system of Anatomical Therapeutic Chemical Classification (Anatomic Therapeutic Chemical classification - ATC) from World Health Organization (WHO) is used and a reference pricing system by therapeutic category is applied. The reference price is calculated for each available strength and/or pack size of medicinal products in each cluster (GG2912/10.30.2012)

As defined in the ministerial decision published in GG1144 / 05.06.2014, the reference price is calculated as the weighted average of the lowest cost of daily treatment of generics that account for 20% of market sales during the last six months prior to the calculation of prices. Sales are based on EOPYY expenditure.

In cases where a patient chooses a medicinal product with retail price equal to the reimbursement price, then he only pays the statutory co-payment (0%, 10%, or 25%). In cases, where the patient decides to choose a product where retail price is greater than the reimbursement price, then he must pay the set co-payment and additionally the full difference between these prices. Finally, when the retail price is lower than the reimbursement price, up to 50% of the difference between them is deducted from the set co-pay. Based on the ministerial decision published in GG335/02.16.2016, the maximum amount a patient can pay on top of the set co-pay cannot exceed €20 per pack.

Finally, all pharmaceutical products belonging in L.3816 / 2010 list are fully reimbursed by SSFs.

Table 11: Interventions and policy measures in the health and pharmaceutical sector in 2015-2016

Ministerial Decision	Gazette Government	Subject
PRICING		
Law 4441	227/A/06.12.16	OECD Toolkit & Simplify procedures for setting up businesses, remove regulatory barriers to competition and other provisions Article 33
MD 28408	1102/B/19.04.16	Pricing Provisions
MD102397	2678/B/11.12.15	Modification and completion of Pricing Provisions
MD 88979	2577/B/30.11.15	Pricing provisions
Law 4337	129/A/17.10.15	Measures to implement the agreement on budgetary objectives and structural reforms
MD 69976	1958/B/11.09.15	Article 15. Provisions for Ministry of Health responsibilities
Error corrections	1078/B/09.06.15	Pricing Provisions
MD 41797	1043/B/04.06.15	Reimbursement arrangements Provisions
MD 38937	946/B/26.05.15	Reimbursement arrangements Provisions
MD 30468	869/B/19.05.15	Pricing Provisions
MD 14425	329/B/10.03.15	Suplementation of Ministerial Decision for Pricing Provisions
REIMBURSEMENT		
MD 57494	2358/B/29.07.16	Approval of reimbursement positive list (article 12 Law 3816/2010)
MD 13547	416/B/19.02.16	Approval of new reimbursement positive list (article 12 Law 3816/2010)
MD 12033	335/B/16.02.16	Modification of patient co-payment 20€ per product
MD 12007	333/B/16.02.16	Approval of reimbursement positive list(article 12 Law 3816/2010)
MD 3223	476/B/01.07.15	Constitution of a Secondary challenge Committee of EOF
MD 44129	1267/B/26.06.15	Approval of reimbursement positive list (article 12 Law 3816/2010)
	1078/B/09.06.15	Correction of errors in reimbursement of medicinal products (Government Gazette 1043 / B / 04.06.2015)
MD 41797	1043/B/04.06.15	Updated regulations of reimbursement of medicinal products
MD 32194	824/B/12.05.15	Approval of Reimbursement list (article 12 Law 3816/2010)
MD 19599	197/Υ.Ο.Δ.Δ./31.03.15	Establishment of a Special Committee for medicinal products and rationalization of a framework for the supply of medicinal products for serious diseases
REBATES/CLAWBACKS		
Law 4447	241/A/23.12.16	Spatial Planning and other provisions Article 34 Hospital clawback
MD 29183	1123/B/20.04.16	Modification MD 2314/2015 Hospital clawback
MD 101945	3006/B/31.12.15	Abolition of rebate 50-30-20
MD 2314	2758/B/18.12.15	Hospital clawback 2016
Law 4354	176/A/16.12.15	Article 41 Clawback for hospital expenditure
Law 4346	152/A/20.11.15	Article 15 Clawback for inpatient pharmaceutical expenditure
MD 41797	1043/B/04.06.15	Provisions for reimbursement of medicinal products
MD 38937	946/B/26.05.15	Deferral of implementation of 50-50

8 STATE'S DEBT TOWARDS PHARMACEUTICAL FIRMS

The Hellenic Association of Pharmaceutical Companies (SFEE) collects and records data related to State's debts of its member companies (on a voluntary basis). Below an overview of total receipts, sales invoices and debts until 31.10.2016 only for the pharmaceutical industry (end date of data collection 31.10.16) are presented. The data collected refer to invoices in the period described above.

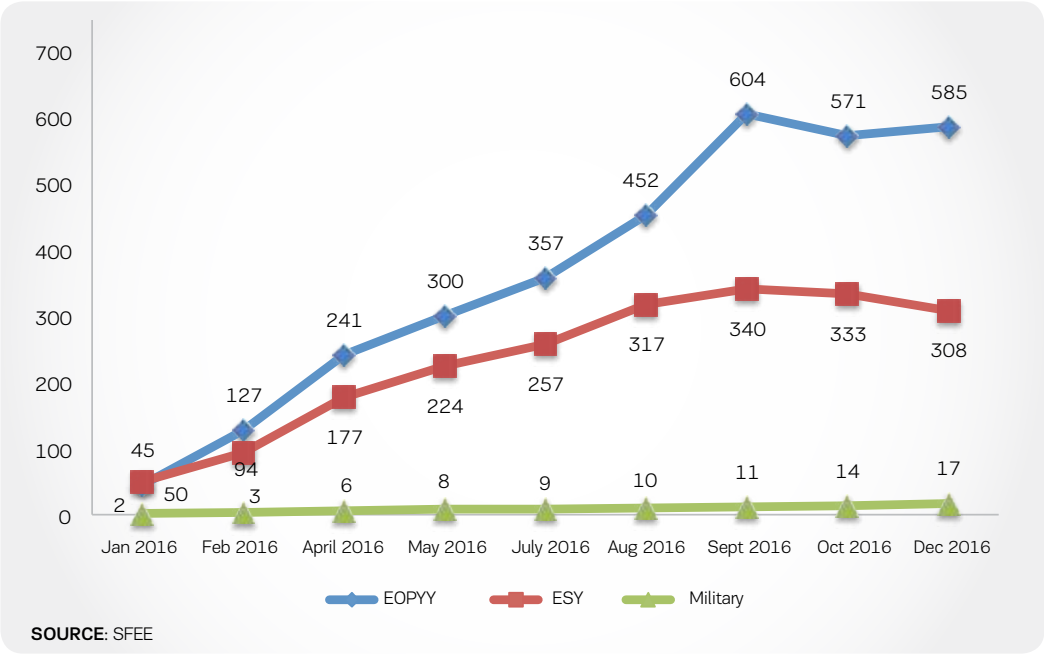
Data for sales, receipts and outstanding debts re NHS hospitals, EOPYY, Military hospitals, judicial hospitals, private entities and IFET are requested. However, comparable data from all companies refer to outstanding debts from NHS, EOPYY and military hospitals, which also constitute the largest part of health expenditure.

Specifically, findings show that:

- The total amount of outstanding debts from the State to Sfee invoices until 31.12.2016 amounted to €910 mil. If broken down to each stakeholder, €585 mil. account for EOPYY, €308 mil. for ESY Hospitals and €17 mil. for Military Hospitals. (These amounts include also companies which sent aggregated data and debts before 2013).
- For 2015, a significant reduction in unsettled debts has been observed of ~11%; particularly, the total outstanding debts amount to ~57%.
- For 2016, no progress in payments of unsettled debts has been recorded either regarding EOPYY, NHS and Military Hospitals. Currently, small decrease is recorded of 7,6% in total as the respective amount has reached €848 mil. From €917 mil. since 10/2016.

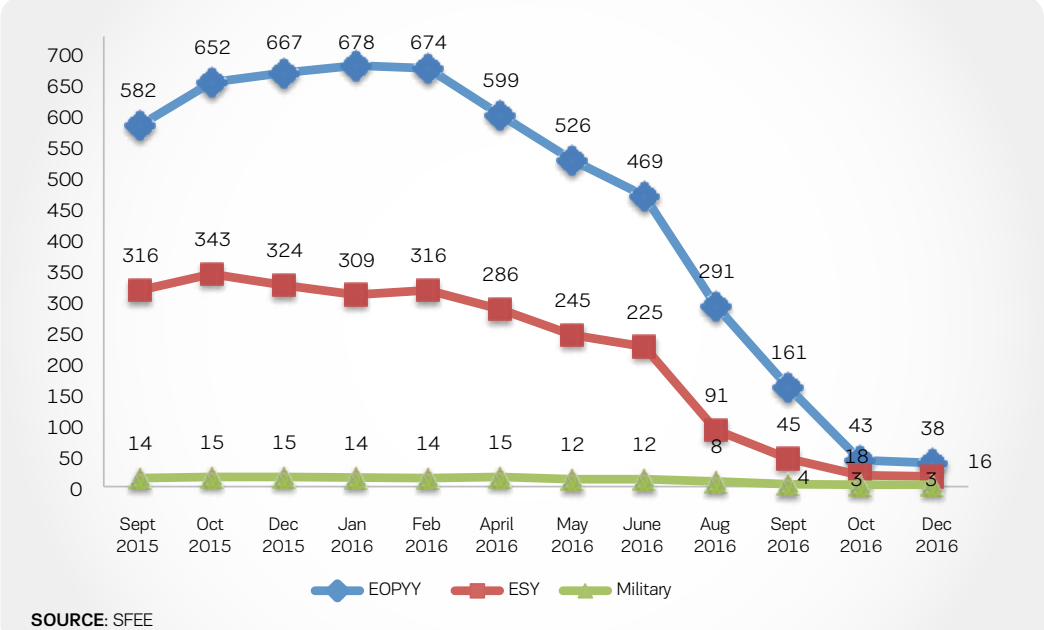
It becomes evident that pharmaceutical companies are significantly behind in settling state debts both standalone and comparative to other providers such as pharmacies, private clinics, diagnostic centres, etc. A stable repayment policy must be established directly so as to avoid inability of pharmaceutical companies to support both the market and their businesses.

Figure 59: Total State debts evolution towards SfEE member companies' until 31.12.2016



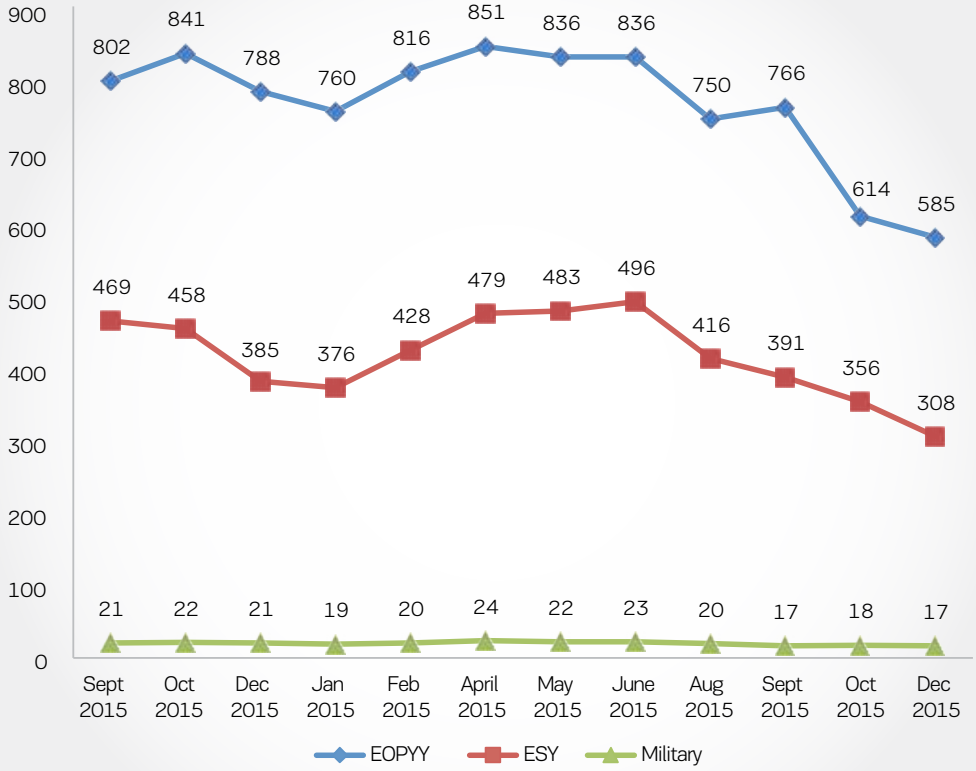
SOURCE: SFEE

Figure 60: State debts evolution towards SfEE member companies', (Invoices for 2015 only € mil.)



SOURCE: SFEE

Figure 61: State debts evolution towards SfEE member companies' (Invoices for 2016 only € mil.)



SOURCE: SFEE

9 APPENDIX 1 SYSTEM OF HEALTH ACCOUNTS (SHA)

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 and a revision was done from 2009-2013, while the same methodology was sent the data for 2014.

Transition table from SHA 1.0 to SHA 2011 codes		
System of Health Accounts SHA 1.0	**Financing Providers (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

Codification at the category of health care activities (HC-health care) remains unchanged between SHA 2011 & SHA 1.0.

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 financing provider - 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 financing providers 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.

10 APPENDIX 2 SYSTEM OF HEALTH ACCOUNTS (SHA) DEFINITIONS

- **Financing of Health Expenditure:** is defined as the Financing 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 financing provider (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 Financing** of Expenditure is defined on the basis of the type (public or private) of the financing provider and on the basis of the type (public or private) of the Health Care Provider. For example, public financing of expenditure on hospitals does not mean the total expenditure of the public hospitals but the total amount of financing that both the public and the private hospitals get by the public financing providers (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

ΣΗΜΕΙΩΣΕΙΣ

HELLENIC ASSOCIATION OF
PHARMACEUTICAL COMPANIES

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