

Life Sciences & Healthcare in Greece
The Road Ahead
January - 2019

Contents

Executive Summary	03
Healthcare	04
• Macro Environment & Healthcare Expenditure	05
• Healthcare Infrastructure	06
• Competitive Landscape	08
Life Sciences	11
• Pharmaceutical Expenditure	12
• Life Sciences Infrastructure	13
• Competitive Landscape	14
Healthcare Regulatory Changes	17

Executive Summary

Deloitte's Life Sciences and Healthcare report examines the status of the Greek Healthcare and Life Sciences sectors in terms of expenditure, infrastructure and competition and summarizes the recent healthcare regulatory changes affecting the Greek market.

On 20th August 2018, Greece completed its stability program and concluded a period of 8 years of recession. During these years **three economic adjustment programs (EAPs)** were signed between Greece and its lenders, aiming at the stabilization of the Greek economy, enhancement of the economy's productive capacity and export competitiveness. The impact of the measures taken was significant as **Greece lost a quarter, in value terms, of its gross domestic product (GDP) while unemployment rose to approximately 30%.**

The **healthcare and pharmaceutical sectors** were heavily affected by the austerity measures taken. Prior to the crisis, Greek healthcare system suffered from various inefficiencies, such as

- (a) centralized decision making,
- (b) lack of referral system and effective gatekeeping mechanisms,
- (c) absence of health technology assessment system,
- (d) non optimal allocation of economic resources.

The measures taken were mostly focused on rationalizing the expenses and efforts were taken to modernize the healthcare system.

Healthcare spending, after reaching its peak in 2009, **decreased by approx. 40%** during the period 2009-2016, in line with a **drop of more than 60% in pharmaceutical spending**.

The decline in healthcare and pharmaceutical spending, along with the measures taken by the government to control the costs, **trimmed the profit margin** for all the market participants, including hospitals and pharmaceutical companies.

Following a considerable growth until 2009, Net Sales of Private Hospitals have been since declining, with the exception of 2012. The **decline is at large attributed** to the introduction of Rebates and Clawback mechanism in 2013.

The aforementioned, accompanied with intense competition and sharply climbing costs, appear to have initiated a **process of consolidation** in the healthcare sector.

Pharmaceutical companies' liquidity was also impacted by the Rebates and Clawbacks mechanism, the value of which **increased by approx. 300%** between 2012 and 2016.

For the first time since the beginning of the crisis, healthcare spending grew by an **average annual increase of 1.2%** between 2014 and 2016. In the same period Pharmaceutical spending stabilized, following an **average annual drop of 0.9%**.



Healthcare

Macro Environment & Healthcare Expenditure

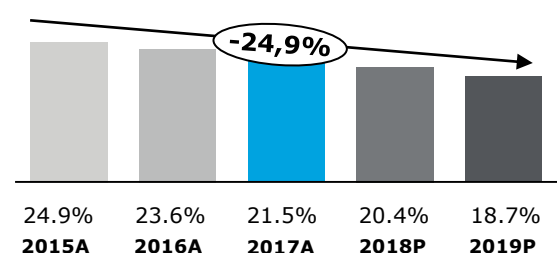
A sign of recovery

The Greek economy demonstrates signs of recovery after years of recession...

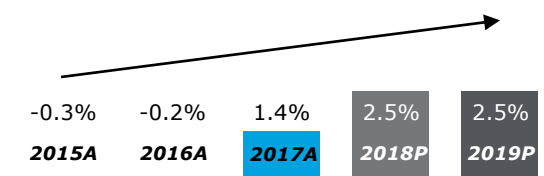
Exit from the 3rd Economic Adjustment Program

- The Eurogroup agreement on 22nd June paved the way for the successful conclusion of the financial assistance program, smoothing out the return of Greece to market financing after 8 years.
- Greece achieved a budget surplus before interest and other one-time payments equal to 4.19% of its gross domestic product in 2017, more than twice the target set for a 1.75% of GDP surplus. The Greek economy is set to maintain growth in 2018/19 and recovery is expected to strengthen as investment rebounds and consumption grows further.
- The performance in specific industries (mainly tourism) has supported the GDP growth, coupled by an increase in public consumption and reduction in unemployment rate. The signs of recovery are expected to continue in the coming years.

Unemployment Rate

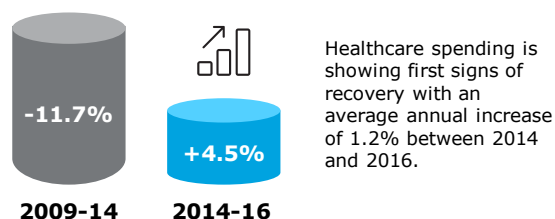


Real GDP Growth*

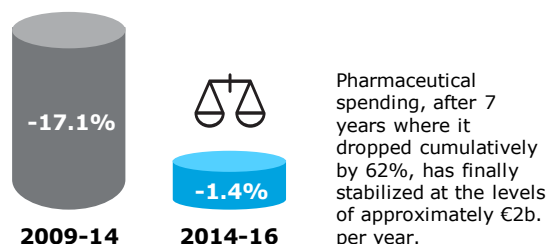


...however the gap in healthcare spending levels is still wide, with Greece lagging behind other EU countries, including countries in South Europe who were also affected by the crisis between 2009-2016.

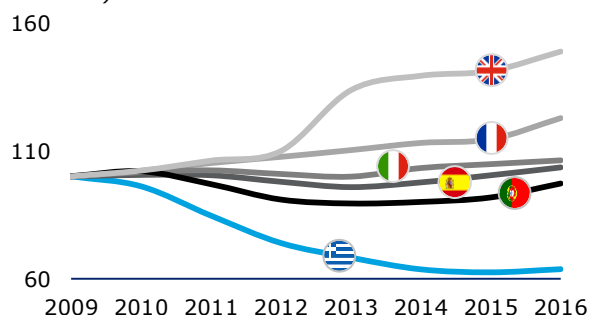
Healthcare spending



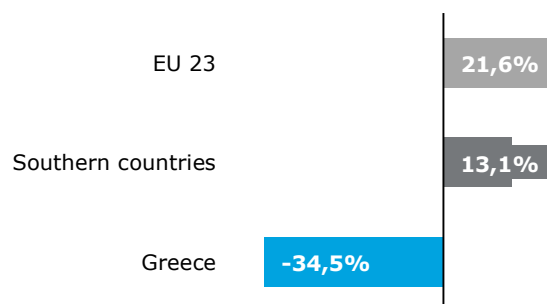
Pharma spending



Normalized Evolution of Healthcare Expenditure (2009=100)



Healthcare Expenditure Cumulative Changes in EU countries (2009-2016)



Healthcare Infrastructure

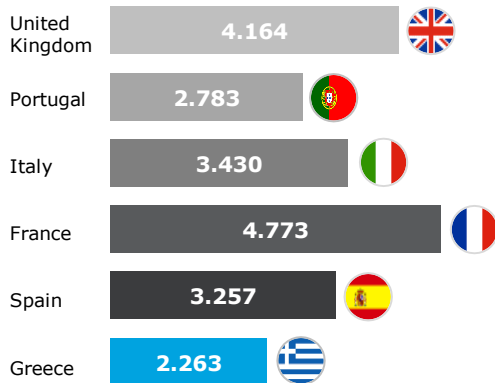
Healthcare spending had been on a downtrend from 2009 to 2016 (reaching €14.4b, down from ~ €23b), mainly due to the contraction in Government and Social Security coverage. As a consequence, households in Greece spent more money on healthcare (from 6.4% in 2011 to 7.4% in 2016) compared to other EU countries, mainly through out of pocket payments.



Healthcare expenditure - per capita

There is a gap in terms of per capita healthcare spending, between Greece and other European countries. In Greece, per capita spending for healthcare in 2016 was 53% less than France and 30% less than Spain.

Health expenditure in USD PPP* per capita, Group of Countries, 2016



Source: OECD

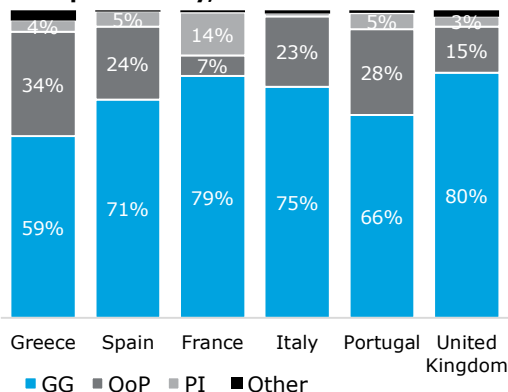
*PPP: Purchasing Power Parity



Healthcare Financing schemes - Comparative

Governmental spending is the main source of financing in the EU, where most healthcare systems are Beveridge (NHS type) systems or mixed systems. In Greece though, the corresponding percentage is considerably lower than in the other countries, while out-of-pocket share is much higher.

As % per country, 2016



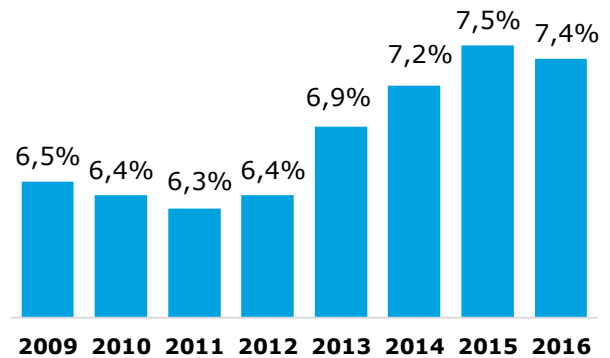
Source: Elstat for Greece (2016 Data), OECD for the rest



Healthcare expenditure - households

Households in Greece, from 2012 onwards, have been increasing their spending in healthcare comparing to the other needs they develop. The peak was in 2015, when health expenditure reached 7.5% of households' spending.

Health expenditure as % of total expenditure of households in Greece

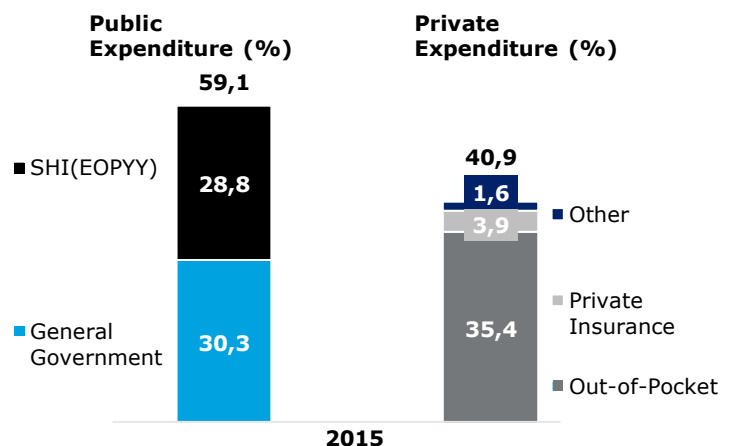


Source: ELSTAT, IOBE 2017



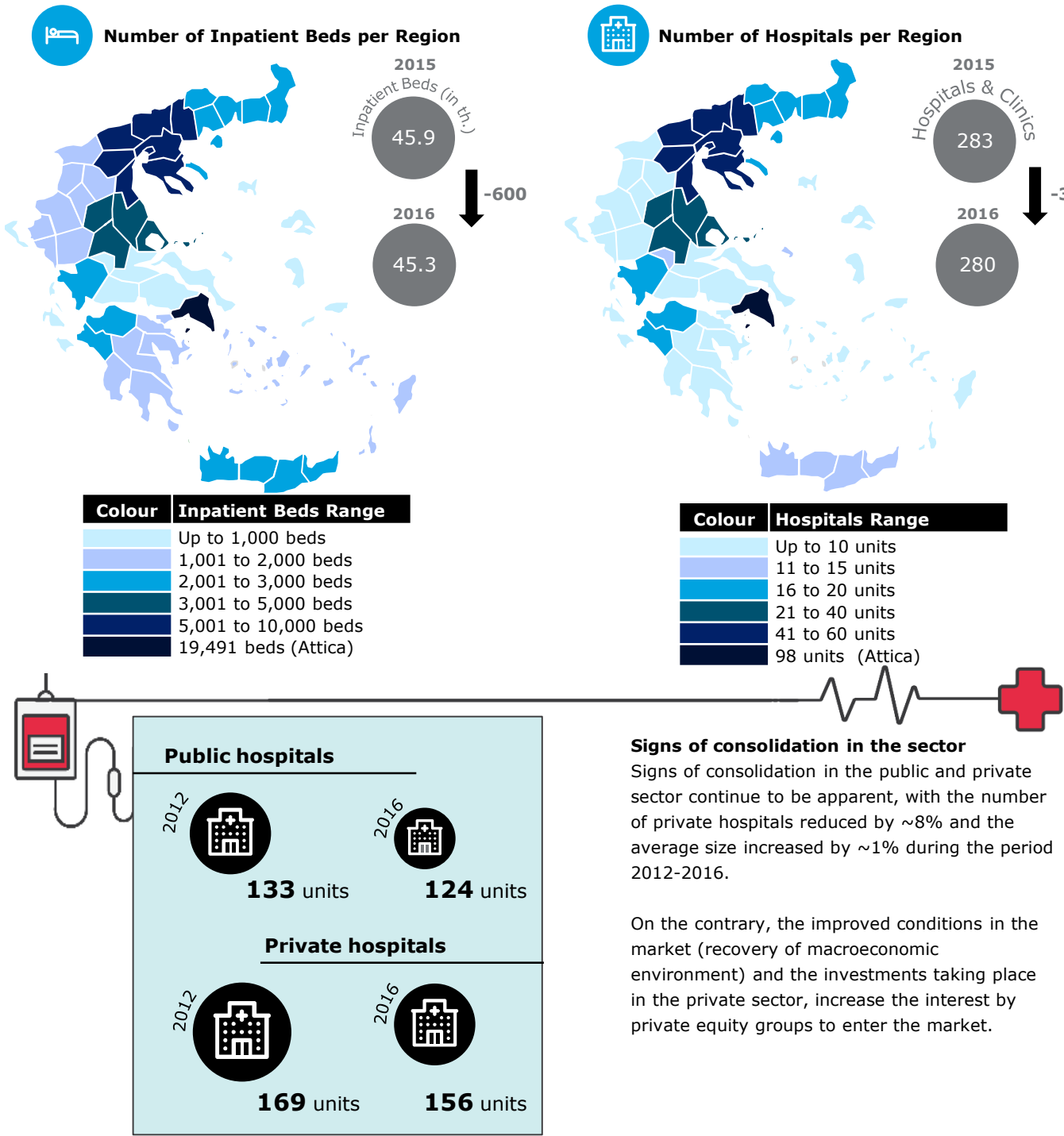
Healthcare Financing schemes - Greece

Public expenditure in 2015 covered almost 60% of the total expenditure while private expenditure reached approximately 41% of the total financing.



GG: General Government and Social Security, OoP: Out of Pocket, PI: Private Insurance, CAGR: Compound Annual Growth Rate

In 2016, there were 280 private and public hospitals operating ~45,300 beds in Greece. Signs of consolidation in the private sector continue, as the number of hospitals has been reduced by ~7% while the number of beds has been reduced by ~8% during the period 2012-2016.



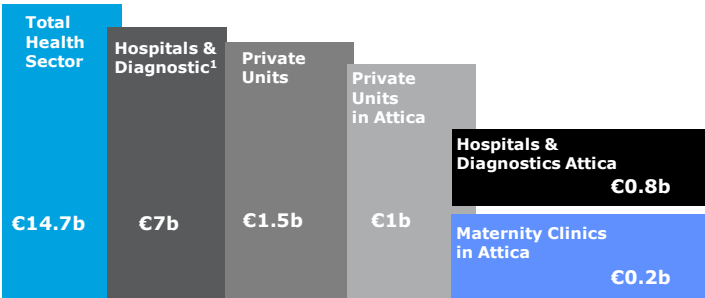
Competitive Landscape

In 2016, the Greek Private Healthcare Providers' sector was estimated at ~€1.5b., which may be further broken down into ~€0.9b for General Hospitals, ~€0.4b Diagnostic Centers and ~€0.2b for Maternity Hospitals in Attica region. In 2016, for the first time since 2012, the net sales of Private Healthcare Providers increased compared to the year before (+2.5% compared to 2015).



Addressable Market

In 2016, out of a total healthcare expenditure of €14.7b, ~€1b is attributed to Private Healthcare Providers operating in Attica, which may be further broken down into €0.8b for General Hospitals & Diagnostic Centers and ~€0.2b for Maternity Clinics.



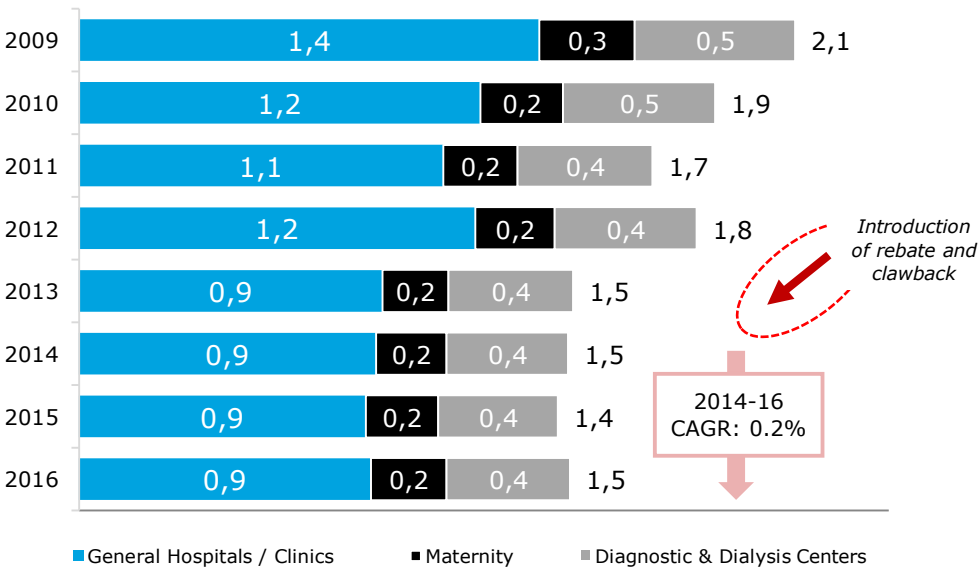
Source: National Statistical Authority, ICAP Group, Published Financial Statements, Deloitte Analysis
Balance refers to Retailers (e.g. pharmacies & medical device suppliers) and Others (e.g. Private Practices & Ambulatory Services)



Evolution of Net Sales of Private Companies

After a considerable growth with a CAGR of +12.5% between 2003-2009, Net Sales of Private Healthcare Providers have been declining, with the exemption of 2012. In 2013, revenues saw a significant drop which was largely attributed to the introduction of **rebate and clawback mechanism**. In 2016, the industry's Net Sales demonstrated an increase **for the first time after four years**. It is also noteworthy that similar to the healthcare overall expenditure, Net Sales remain relative stable since 2013.

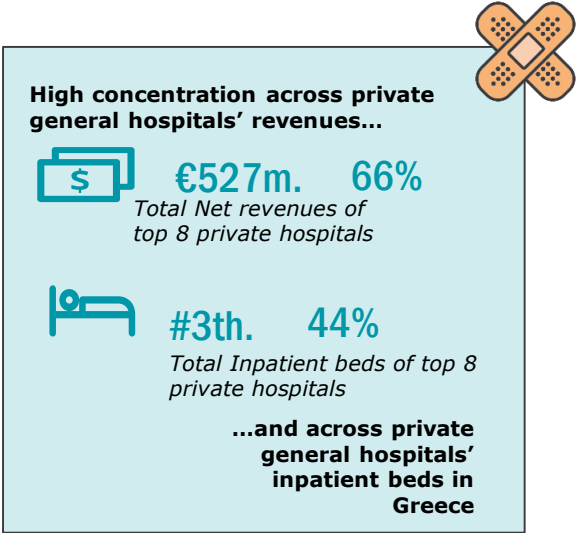
Private HC Providers' Market Share (in € b., 2016)



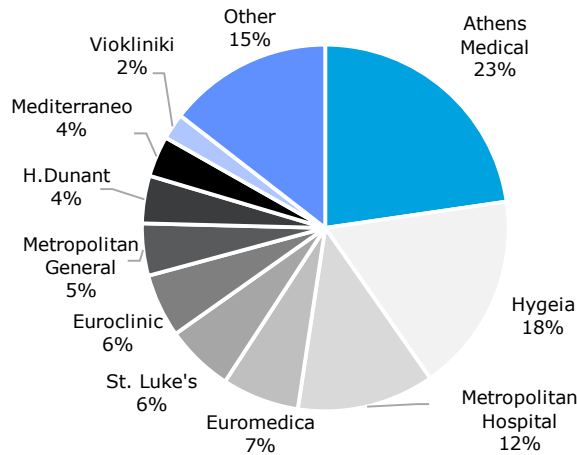


Market Concentration

In 2016, the top 8 private healthcare providers in terms of net sales represented approximately ~66% of total Net Revenue and 44% of total inpatient beds of all General Hospitals in Greece. Three providers accounted for almost 52% of the general private clinic market share in 2016, two providers accounted for ~58% of the Maternity Clinics share and three providers for 35% of Diagnostic Centers.



Private Healthcare Providers' Market Share (in %, 2016)



Recent Developments

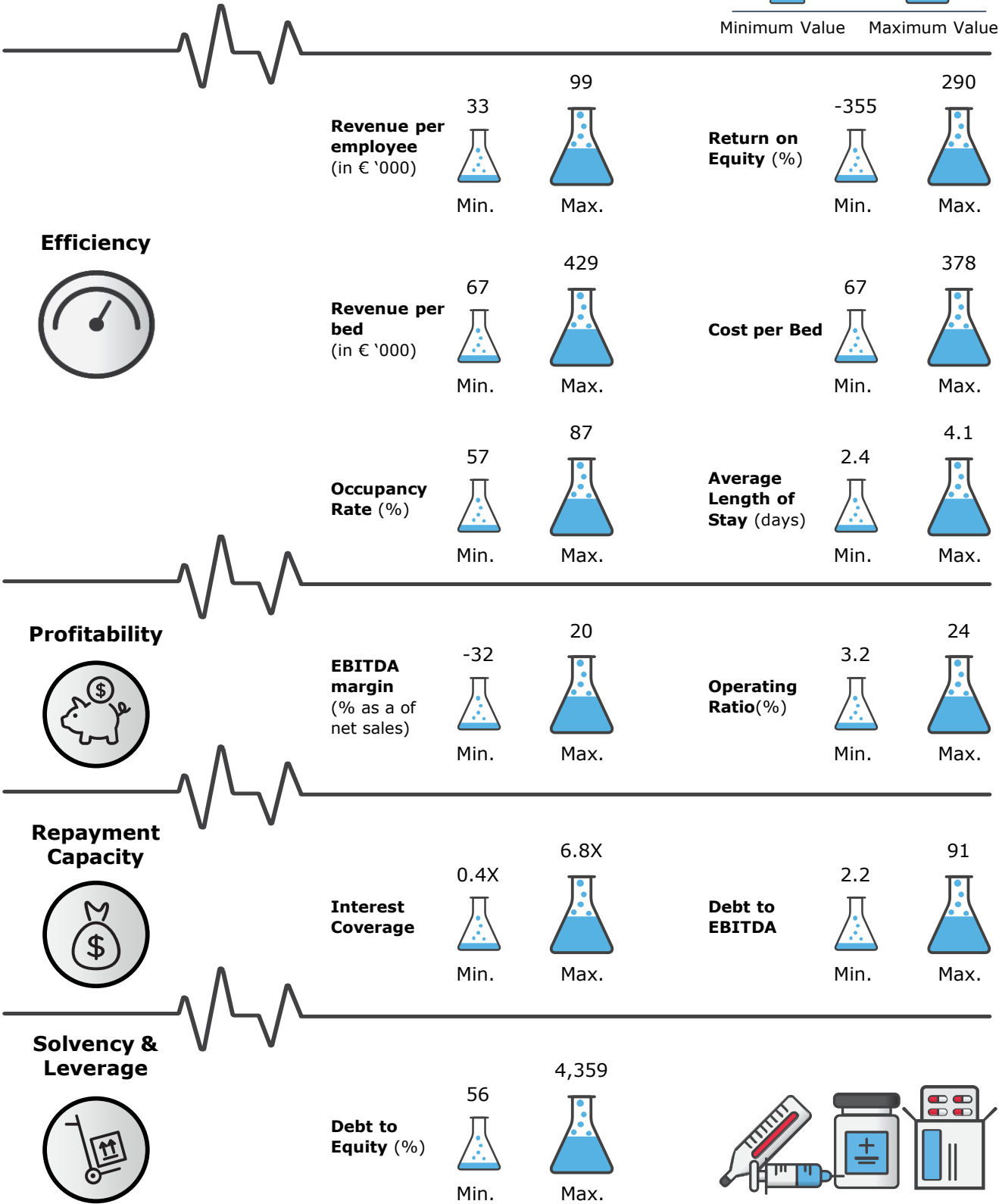
In the last year CVC Capital Partners, through Hellenic Healthcare S.A.R.L., increased its presence in the Greek Healthcare market, with the acquisition of IASO General (renamed Metropolitan General) in April and the recent acquisition of Hygeia Group. The latter is the largest deal in the Greek Healthcare sector and gave Hellenic Healthcare S.A.R.L. the leading position in the market. M&A activity is expected to continue with Henry Dunant and IASO being the next targets for the investors.



Key Operational and Financial Performance Indicators (2016)
for the top 8 Private Hospitals (where available)



Minimum Value Maximum Value



Life Sciences

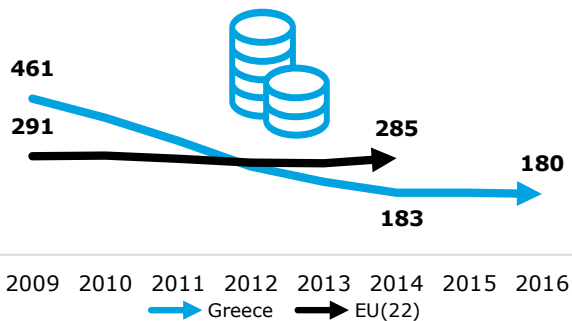
Pharmaceutical Expenditure

Public Pharmaceutical spending in Greece dropped significantly between 2009 and 2014 and, despite the stabilization between 2014 and 2016, in per capita terms it is still lower than EU peers. In order for the unmet need to be covered, spending from pharma companies (through rebates and clawbacks) and patients (out of pocket payments) was increased.

Evolution of per capita pharma spending

Pharmaceutical per capita spending in Greece, as compared to the EU average, dropped from 163% in 2009 to 64% in 2014. While the EU average remained at constant levels through the same period (2009-2014), pharma spending in Greece stabilized after 2014.

Per capita, (in €)

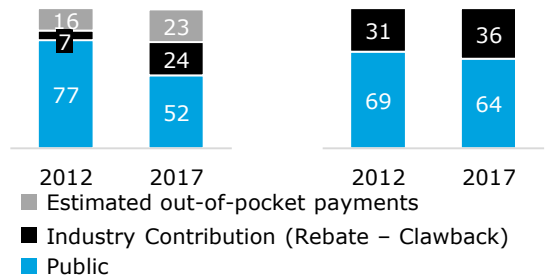


Inpatient vs outpatient

The private (R&C, out of pocket payments) pharmaceutical expenditure increased for both retail (outpatient) and hospitals (inpatient) during the period 2012-17. In 2017, total Industry contribution as % of total public pharma expenditure for Greece reached 27.3%, while the EU average was 8.6%. In the same time, the patient co-payments approached industry contribution share of 23%.

% on total **outpatient** pharmaceutical expenditure

% on total **inpatient** pharmaceutical expenditure



Market Pressures

With the spending for rebates and clawbacks soaring and revenues dropping, pharma companies look for new business models to sustain their market position. As a result, profit margins have soaked

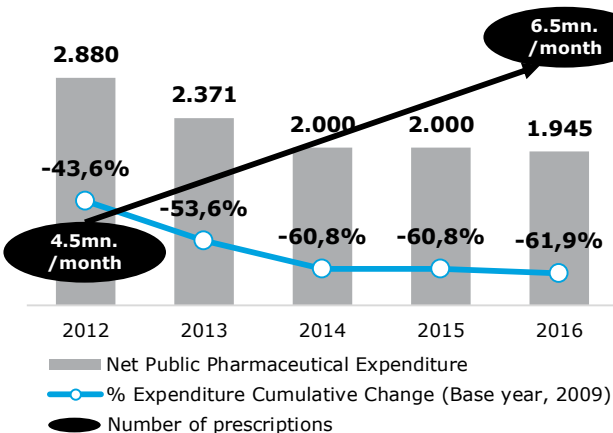
Key Facts on Profit & Losses in the Pharma Industry

- EBITDA Margin of pharma companies have plunged
- Only 1 pharma company, out of 100, has >10% EBITDA
- R&C are putting considerable pressure on profits

Public pharmaceutical expenditure vs # of prescriptions

Public pharmaceutical expenditure plunged between 2012 and 2014 in an attempt to control high costs, while from 2014 to 2016 it remained almost steady. On the other hand, the number of prescriptions followed the opposite direction, reaching 6.5 mn./month in 2016 and thus expanding the unmet need.

Net Public Pharmaceutical Expenditure (in € mn.)



Source: IOBE 2017, SFEE 2017, Deloitte Analysis

Life Sciences Infrastructure

The Pharmaceutical market in Greece is characterized by a relatively low penetration rate for generics and high for off-patent drugs compared to the EU average. The Pharmaceutical companies are appearing more extrovert with the trade balance shrinking. This justifies a new norm for the industry, with focus on exports and investments in R&D.

Pharma market 2018



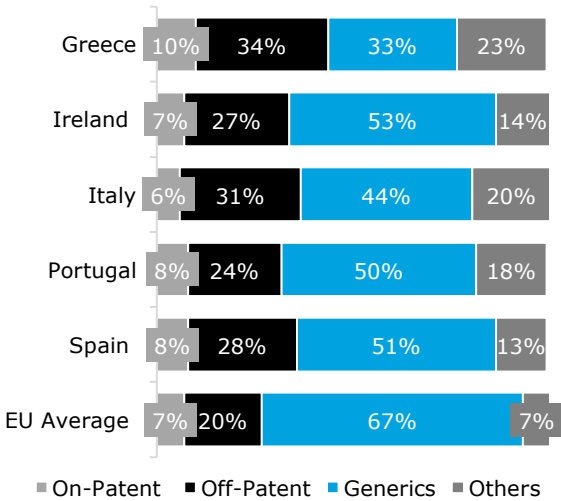
- 106** Multinational and National Pharma Companies (SFEE & PEF members)
- 100** Wholesalers & **26** Pharmacist associations
- 10,386** pharmacies
- 29** EOPYY pharmacies
- 13,100** employees



Penetration of pharmaceuticals

The market share of non-protected pharmaceutical products amounted in 2017 to more than 67% (off-patent & generics). It is worth noting that the penetration rate of off-patent is higher than the average of EU18 (19.8%), while **penetration rate of generics is much lower than the average of EU18 (66.9%)**, leading the companies in Greece to invest in R&D (**Still in low level comparing to other EU countries**) and focus in export markets.

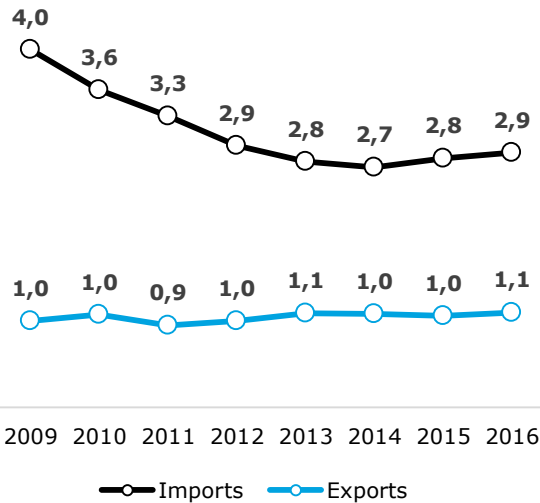
Penetration rate of pharmaceuticals in volume based on patent status vs EU countries, 2017



External trade evolution

Imports and exports of pharmaceutical products increased in 2016 by 2.3%, and 3.9% respectively, resulting on a deficit of -€1.8 bn. The evolution of external trade indicates in general terms that there is a boost in exports from 2011 onwards and in parallel a decline in imports, as the public expenditure was falling, creating **a CAGR in trade balance of -3.4%**, concerning 2009-16.

Imports vs. exports (in € bn.)



Competitive Landscape

In 2009, net sales of pharmaceutical companies in Greece reached a peak point. The introduction of Rebates and Clawbacks trimmed their revenues in the following 5 years, however as the public expenditure for pharmaceuticals stabilized since 2014 at approximately €2b., the sales for pharma companies followed a similar pattern.

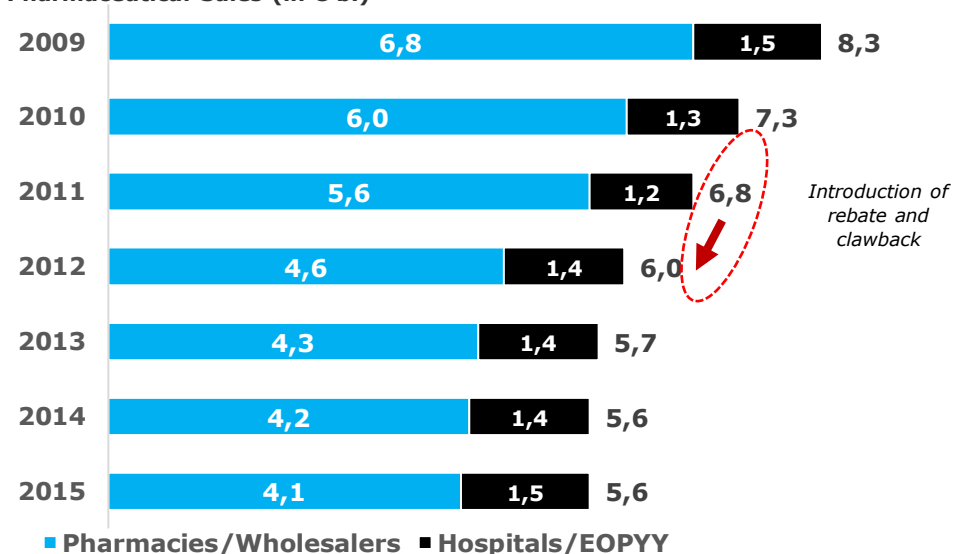


Evolution of Sales of Pharma Companies

Pharmaceutical sales have been on a drop since 2009, a decrease attributed to the reduction in prices, as well as the introduction of clawback induced further reduction.

The first signs of improvement started to appear during 2014 and 2015, where sales remained stable after 5 years. The drop in sales in 2016 is due to public expenditure decrease.

Pharmaceutical Sales (in € b.)¹



5-year CAGR:
-6.5%

2-year stable

Note¹: Figures include clawback and rebates

Source: Published Financial Statements, European Observatory

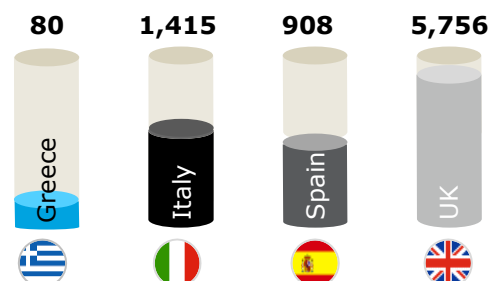


Investments in R&D

Greece invests in R&D much lower compared to its peers. In 2016 Greece spent only 5.7% compared to Italy and 8.8% compared to Spain. The investments in R&D are expected to rise, as the latest R&D tax incentive included explicitly clinical trials 1, 2 and 3. However the rise will be moderate, as long as the intensity and the simplicity of the incentives provided by the Greek state do not match the available incentives in the other countries.

Source: EFPIA, SFEE, Deloitte Analysis

R&D investment 2016 (in € mn.)





Market Performance

The key players performance based on EBITDA has significantly decreased in comparison to 2009 pick. Companies in their effort to remain profitable have turned to exports.

The top 10 Pharma companies hold 41% of the total market share and M&A for the sector in Greece in 2017 reached 4.6% of total M&A deals value.

Top 10 companies EBITDA evolution

2009

4 out of 10 had
EBITDA % > 10%

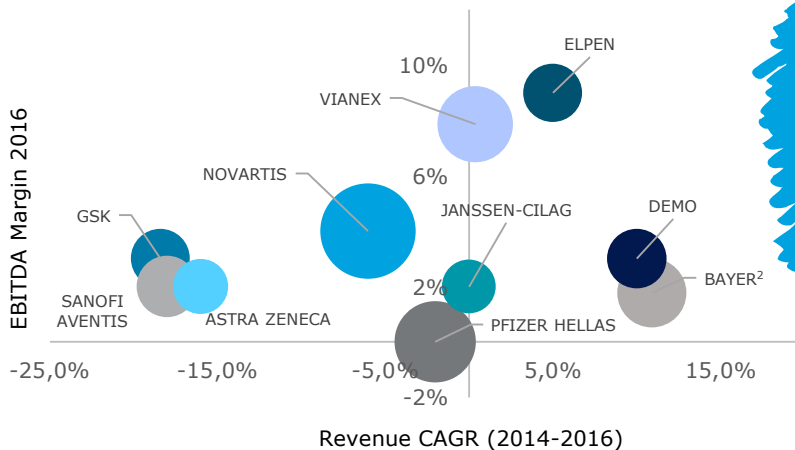
2016

1 out of 10 has
EBITDA % > 10%

On average their EBITDA was **4% higher** in 2009 in comparison to 2016

Net Sales Growth (CAGR 2014-2016) vs. EBITDA Margin 2016

(Bubble size indicates Total Revenue)



In 2016, none of the top 10 players in the market had negative EBITDA Margin, however the majority positioned at levels between 2% - 4%.

On the other side, despite the fact that the market stabilised between 2014 and 2016, half of the top 10 players at the period in the market had negative Revenue CAGR.

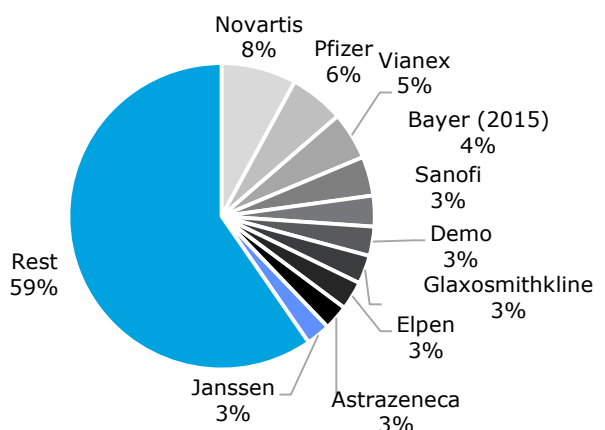
Source: Published Financial Statements, Deloitte analysis

Note²: Latest available data (2015)

Market Share of top 10 Pharma Companies 2016

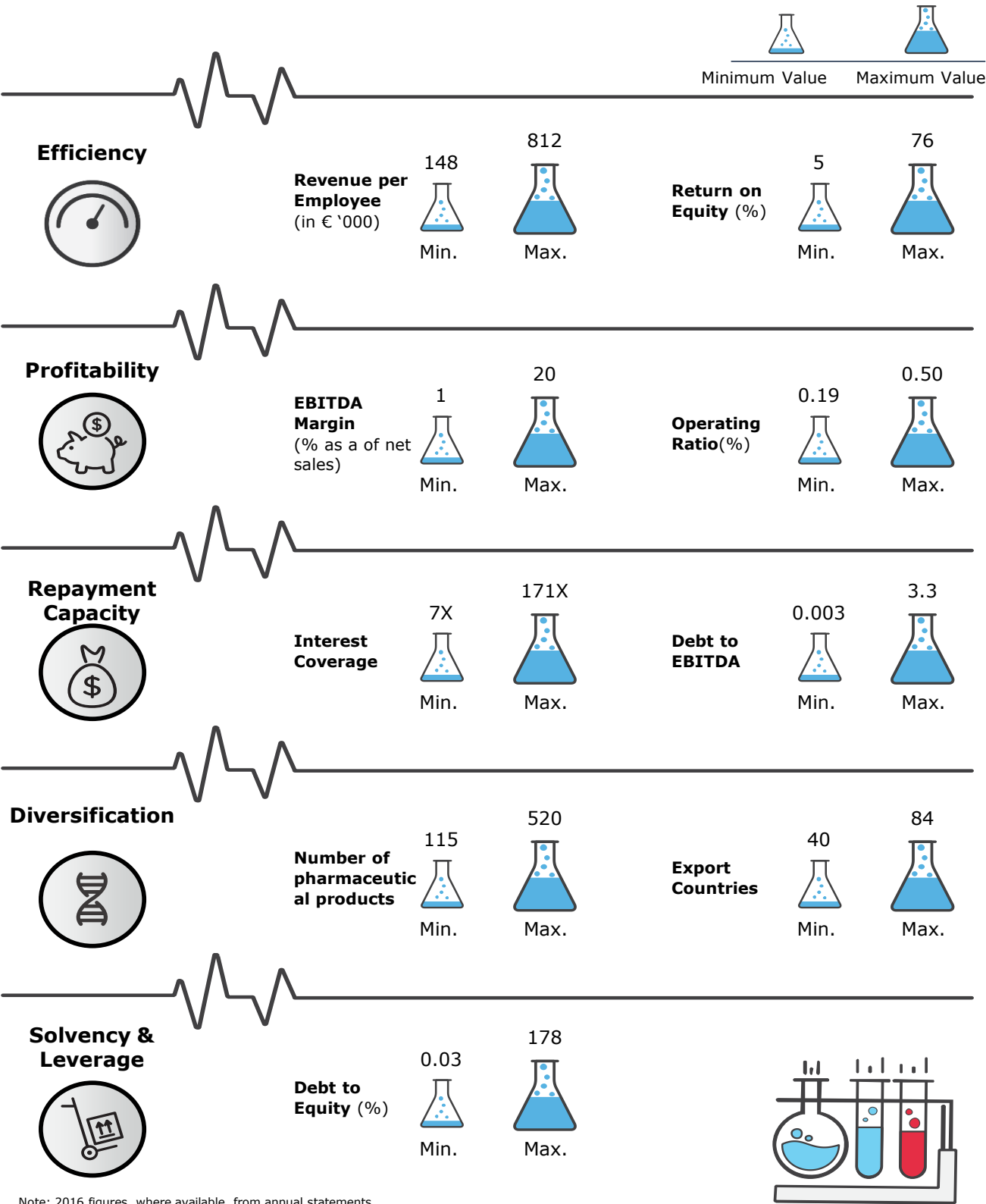
In 2016, the market appears to be quite fragmented, with 90 companies sharing 59% of the total pie and the top 10 players sharing the remaining 41%.

The list of top 10 players in the market consists of 7 multinational and 3 Greek companies.



Source: Published Financial Statements, Deloitte analysis

Key Operational and Financial Performance Indicators
for the top Pharma Companies (where available)



Note: 2016 figures, where available, from annual statements
Source: Published Financial Statements, Companies' Official Sites

Regulatory Changes

Healthcare

In the last years, the Greek Healthcare system is going through a large scale transformation. This includes the development of a roll-out plan for health units, as well as revision of the service package and contractual agreements for health units, piloting of integrated health and social services for first time in selected areas and addressing informal payments.

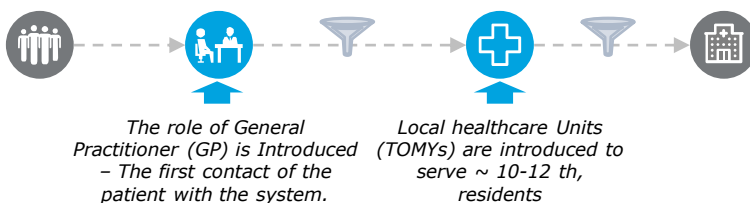
The healthcare reforms were designed in a way to control the public spending which was higher compared to other EU countries and to strengthen capacity for universal coverage, a Phase 2 (SCUC2) action. Government's plan is to cover the rising unmet need through (a) modernization of healthcare sector, (b) rationalization of expenses and (c) Primary Care driven (gatekeeping) model of care.

Healthcare Reforms

- ⊖ **Secondary Care Reform** – Requested by the lenders, with the aim to provide a new legal framework for the operations of the Private Clinics, specifying a threshold of beds for the authorization of establishment of private clinics
- ⊖ **Diagnostic Related Group (DRG) Reform** (2019) – Introduction of DRG system to be piloted in 18 public hospitals. This will move Greece to Activity Based Funding and will provide transparency to the expenses and effective reimbursement ($\text{Price per DRG} = \text{Cost Weight} \times \text{Base Rate} \times \text{Adjustment Factor}$)

Primary Care Reform (2017)

- ⊖ The newest **Primary Care Plan**, aims to rationalize first-contact primary care services and create a second-tier ambulatory infrastructure



Technology Reforms

- ⊖ **Price List Observatory** – Collects and analyses tenders and technical specifications published by hospitals
- ⊖ **EOPYY Digital Transformation** – The national healthcare provider started its digital transformation journey



Pharmaceutical

The measures taken in the Pharmaceutical sector are mainly imposed to the government by the lenders and have focus on short term results (copayments, clawback, rebate) rather than the long term sustainability (value based pricing, managed entry agreements, HTA). The introduction of HTA in Greece will be the first reform into this direction.

The main reforms that have taken place in the healthcare and pharmaceutical markets are presented below, with special focus on HTA introduction and Primary Care reform which are aimed at long term sustainable improvements.

Pharmaceutical Reforms

- ⊖ **Generics** – Measures to facilitate **penetration of generics** in the market include (a) **rebate** of 0.8% for pharmacies on off-patent drugs, (b) **economic incentive** for people in need if they select generic drugs and (c) **minimum number** of generics in pharmacies
- ⊖ **Rebates** – will be **extended** for the period 2019 – 2022
- ⊖ **Clawbacks** –will be **extended** for the years 2019 – 2022 and the method of determining spending limits will be **regulated**, based on the annual GDP growth

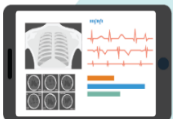
Health Technology Assessment

- ⊖ **HTA** is expected to be introduced in the following months, with the aim to control pharma expenditure and improve the access for new drugs in the system. **Factors** that led to the **introduction** of HTA in Greece are:
 - (a) The demographic **changes**
 - (b) Pricing **Policy** and generics **penetration** (rebate, clawback, therapeutic protocols and guidelines),
 - (c) Epidemiologic **changes** and (d) Insurance market **effectiveness**



Technology Reforms

- ⊖ **E-Prescription** – the e-Prescription system **monitors** pharmaceutical **consumption** and **referrals** for clinical examinations and tests



Contacts



Vassilis Kafatos

Partner
Strategy & Operations
Greece

Office tel.: + 30 210 6781210

Email: vkafatos@deloitte.gr



Yiannis Valvis

Principal
Strategy & Operations
Greece

Office tel.: +30 210 6781215

Email: yvalvis@deloitte.gr



Vasilis Balanis

Manager
Strategy & Operations
Greece

Office tel.: +30 210 6781243

Email: vbalanis@deloitte.gr

Offices

Athens

3a Fragoklissias & Granikou Str.
151 25 Maroussi
Athens, Greece
Tel: +30 210 6781100
Fax: +30 210 6776232
www.deloitte.gr

Thessaloniki

VEPE Technopolis
Building Z2 555 35 Pylaia
Thessaloniki, Greece
Tel: +30 2310 406500
Fax: +30 2310 416447



Deloitte refers to one or more of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"), its network of member firms, and their related entities. DTTL and each of its member firms are legally separate and independent entities. DTTL (also referred to as "Deloitte Global") does not provide services to clients. Please see www.deloitte.com/about to learn more about our global network of member firms.

Deloitte Certified Public Accountants S.A., Deloitte Business Solutions S.A., Deloitte Business Process Solutions Societe Anonyme for the Provision of Accounting Services and Deloitte Alexander Competence Center S.A. are the Greek member firms of Deloitte Touche Tohmatsu Limited, a UK private company limited by guarantee ("DTTL"). "Deloitte Certified Public Accountants S.A." provides audit and risk advisory services, "Deloitte Business Solutions S.A." financial advisory, tax and consulting services and "Deloitte Business Process Solutions Societe Anonyme for the Provision of Accounting Services" accounting outsourcing services. "Deloitte Alexander Competence Center S.A." based in Thessaloniki is a center of innovation providing financial advisory, tax, consulting and risk advisory services. "Koimtzooglou-Leventis & Associates Law Partnership" ("KL Law Firm") is a Greek law partnership qualified to provide legal services and advice in Greece.

Deloitte provides audit, consulting, financial advisory, risk advisory, tax and related services to public and private clients spanning multiple industries. Deloitte serves four out of five Fortune Global 500® companies through a globally connected network of member firms in more than 150 countries and territories bringing world-class capabilities, insights, and high-quality service to address clients' most complex business challenges. To learn more about how Deloitte's approximately 245,000 professionals make an impact that matters, please connect with us on Facebook, LinkedIn, or Twitter.

This communication contains general information only, and none of Deloitte Touche Tohmatsu Limited, its member firms, or their related entities (collectively, the "Deloitte Network") is, by means of this communication, rendering professional advice or services. Before making any decision or taking any action that may affect your finances or your business, you should consult a qualified professional adviser. No entity in the Deloitte Network shall be responsible for any loss whatsoever sustained by any person who relies on this communication.

© 2018. For information, contact Deloitte Greece.

Follow **Deloitte Greece** on:

