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## Policies to contain public pharmaceutical expenditure by acting not only on the supply-side but on the demand-side as well

- The State has a double identity in pharmaceutical products market; it is the “buyer” and at the same time the regulator of prices
- The emphasis on price controls is not effective in containing pharmaceutical expenditure if it is not accompanied by measures to control volume consumption
- The fragmentation of pharmaceutical expenditure supervision and control led to runaway expenses; public spending on pharmaceuticals amplified from €0.9bn in 1995 to €4.3bn in 2007 and €5.1bn in 2009
- Robust increase in imported pharmaceuticals and decrease in domestically produced ones over the last decade.

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### Greek health system governance

The Greek healthcare system was characterized by a large number of regulatory bodies, whose roles sometimes conflict. Concerning the pharmaceutical care, several ministries shared responsibilities for pharmaceutical issues. The Ministry of Health and Social Solidarity was responsible for planning and implementation of pharmaceutical policy. The Ministry of Development was responsible for pricing. The Ministry of Labour and Social Security supervised social insurance organizations and the Ministry of Mercantile Marines supervised the NAT. The Ministry of Economy and Finance was responsible for reimbursing medicinal products for civil servants. The above system apart from being very difficult to monitor it was not efficient. Hence, since May 2010 under the MoU all health-related activities were brought under one ministry; the Ministry of Health in order to rationalise licensing, pricing and reimbursement systems for medicines. In this way, the supply side cost containment measures is expected to be reinforced.

Furthermore, there were no targets or budget ceilings in the Greek healthcare system and thus there have been major expenditure overruns. Since May 2010, the overarching objective is to keep public health expenditure at or below 6% of GDP and to bring public spending on outpatient pharmaceuticals to about 1% of GDP (in line with EU countries average). For these targets to be fulfilled measures acting not only on the supply-side but on the demand-side as well were put in place.

### Pharmaceutical policy

The State has a double identity in pharmaceutical products market; in one hand it has the role of the “buyer” as the social security funds cover the pharmaceutical care and on the other hand the State is the one who regulates the prices of pharmaceutical products.

The pharmaceutical policy of all Greek governments over the past 20 years has focused, from a macroeconomic perspective, on price regulation in order to control expenditure. However, pharmaceutical expenditure increased (Table 2) due to the fact that this kind of intervention failed to control consumption volume (demand-side), which is determined by factors including the number of active physicians, doctors' prescribing behaviour and patient' demand.

In Greece, the last 30 years the number of doctors increased by 134% and by 46% only over the last decade. (Table 1)

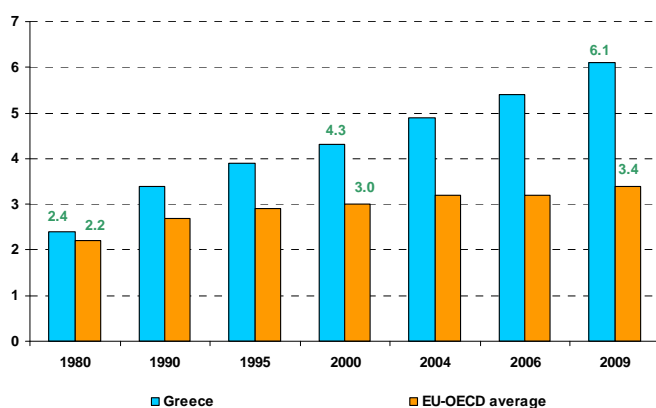
**Table 1**  
Number of doctors' evolution in the last 30 years

<b>1980</b>	<b>23,469</b>
<b>1990</b>	<b>34,336</b>
<b>1995</b>	<b>41,039</b>
<b>2000</b>	<b>47,251</b>
<b>2004</b>	<b>53,943</b>
<b>2006</b>	<b>59,599</b>
<b>2009</b>	<b>69,030</b>

Source: OECD Health Data 2009

What's more, in Greece the doctors' density per 1,000 inhabitants it also soared compared to the EU-OECD countries<sup>1</sup> average; it stood at 2.4 vs. 2.2 the EU-OECD average in 1980 and it increased to 6.1 vs. the EU-OECD average of 3.1 in 2010. (Figure 1)

**Figure 1**  
Doctors' density per 1,000 inhabitants in Greece and in EU-OECD countries



Source: OECD Health Data 2012, Eurobank Research

Under the MoU, attention is paid to the control and monitoring of doctors' prescription behaviour. There are measures such as budget ceilings on doctors, utilization reviews and prescribing

<sup>1</sup> The EU-OECD countries includes the following countries: Austria, Belgium, Czech, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Poland, Portugal, Spain, Slovakia, Slovenia, Sweden, U.K. The EU-OECD average refers to the average of the above countries.

guidelines. It's now clear that the emphasis on price controls is not effective in containing pharmaceutical expenditure if it is not accompanied by measures to control volume consumption.

## Pharmaceutical expenditure in Greece

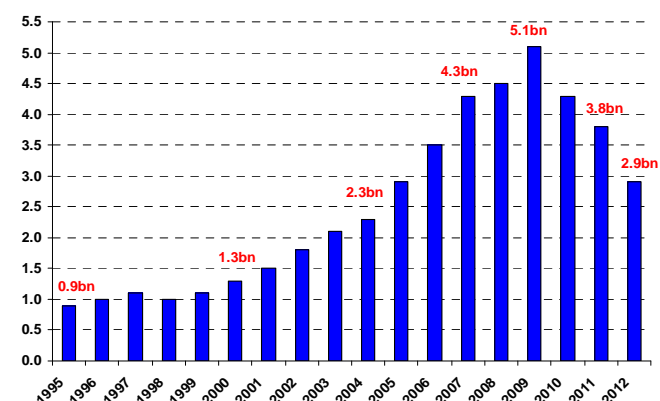
Over the period 1995-2007, pharmaceutical expenditure increased considerably from €1.2bn to €4.5bn (ca 275% increase). Note that, in 1995-2007 inflation decreased by 8.9% on average terms in 1995 to 2.9% on average terms in 2007. An increase was also recorded in pharmaceutical expenditure as a share of total health expenditure (THE); it grew from 15.7% in 1995 to 24.8% in 2007<sup>2</sup>. In 1995-2007 the same share (of pharmaceutical expenditure over total health expenditure) in EU-OECD countries increased from 15.8% to 17.4% (see Focus 2). Furthermore, over the same period, public expenditure as a share of total pharmaceutical expenditure rose from 70.9% to 94.6%. Public spending on pharmaceuticals amplified from €0.9bn in 1995 to €4.3bn in 2007 i.e. ca 400% increase in 12 years time. (Table 2) (Figure 2)

**Table 2**  
Pharmaceutical expenditure over 1995-2007 in Greece

	<b>1995</b>	<b>1996</b>	<b>1997</b>	<b>1998</b>	<b>1999</b>	<b>2000</b>	<b>2001</b>	<b>2002</b>	<b>2003</b>	<b>2004</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>
<b>Total</b>	120	135	149	174	186	182	208	280	270	296	314	361	452
<b>Public</b>	88	98	111	91	108	128	152	178	232	222	298	304	428
<b>Public%total</b>	70%	73%	74%	69%	70%	70%	72%	75%	77%	75%	95%	92%	94%
<b>Total%of THE</b>	15%	16%	16%	13%	14%	18%	18%	18%	20%	22%	21%	27%	24%

Source: OECD Health Data 2012, NSSG 2009

**Figure 2**  
Public pharmaceutical expenditure over 1995-2012 in Greece



Source: IOBE 2009, IOBE 2013

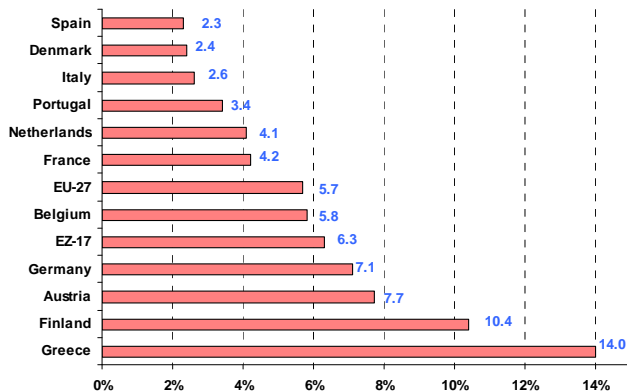
<sup>2</sup> There are no official-available data in OECD database regarding pharmaceutical expenditure in Greece.

### Growth of pharmaceutical products over 2000-2010

The pharmaceutical products' annual growth was very robust in the last decade. In Greece the average annual growth was the highest in the EU and amounted to 14% over 2000-2010 compared to 5.7% in the EU-27 and 6.3% in the EZ-17. (Figure 3)

Figure 3

#### Average annual growth rate on pharmaceutical products over 2000-2010 in EU countries

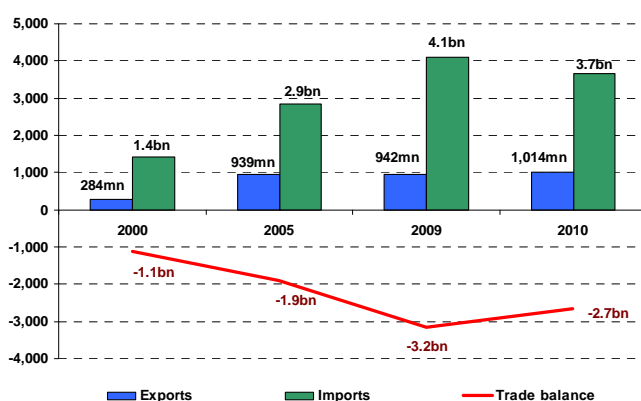


Source: Eurostat, IOBE-2013, Eurobank Research

At the same period 2000-2010, the sector of pharmaceutical products had a trade deficit which was growing very fast, by a 9% on average annual terms. Pharmaceutical trade deficit almost tripled in 9 years time; it grew from €1.1bn in 2000 to €3.2bn in 2009. (Figure 4)

Figure 4

#### Imports, Exports and Trade Balance of Pharmaceutical products

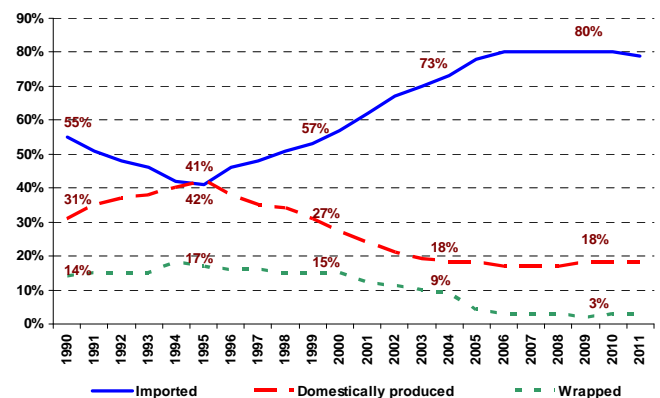


Source: Eurostat, IOBE 2013, Eurobank Research

In addition, regarding the breakdown of pharmaceuticals we observe a robust increase in imported pharmaceuticals over the last decade and a decrease in domestically produced ones. What's more, the imported pharmaceuticals occupied 55% as a share of total pharmaceutical products market while the domestically produced and the wrapped<sup>3</sup> ones occupied 31% and 14%, respectively, in 1990. In 10 year time, the share started to change; the imported ones' share was 57% and the produced ones' was 27% in 2000. In 2005, in only 5 years time, this share changed significantly with imported ones recording 78% and the domestically produced ones occupying only the 18% of the pharmaceutical market. (Figure 5)

Figure 5

#### Breakdown of pharmaceuticals over 1990-2011 in Greece



Source: IFET, IMS, PEF, Eurobank Research

### Pricing policies of pharmaceuticals in Greece

The prices of all medicinal products, either branded or generics and OTC (Over-The-Counter) drugs are government controlled. A medicinal product holding a market authorisation may not be sold in Greece until it has been granted a price. In order to grant a price to a specific medicinal product, the latter has to be marketed at least in the country of origin or in any other EU Member State. Three prices apply to medicinal products; the wholesale price, the retail price and the hospital price.

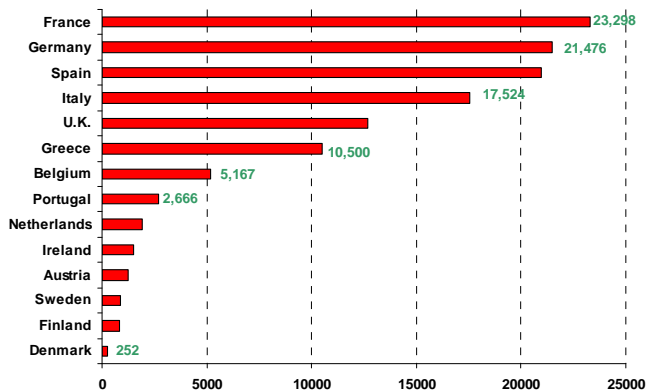
The wholesale price (pharmacy purchase price) is the price at which the drug is purchased by the pharmacist. This price includes the wholesaler's profit margin (under the MoU it was cut from 8.0% to 5.4%) based on the ex-factory price of the producer or importer. The ex-factory price is the price at which the pharmaceutical company sells to wholesalers prior to any discounts.

<sup>3</sup> Wrapped pharmaceutical medicines are the ones which their substances are imported but they are wrapped in Greece.

The retail price derives from the wholesale price plus the pharmacist's profit margin and VAT. The pharmacists' gross profit margin was 35% prior to MoU (currently it stands at 15%) on top of the wholesale price and the VAT was 9% (currently it stands at 6.5%). The above significant pharmacist's gross profit margin might explain the large number of pharmacies in Greece compared to other EU countries. In the last decade, the number of pharmacies increased by 26%; there were recorded 10,500 pharmacies in 2007. (Figure 6) Moreover, Greece has the largest number of pharmacies per 100,000 inhabitants among EU countries; it accounts for 94.2 vs. 38 in France and 26.1 in Germany. (Figure 7)

Figure 6

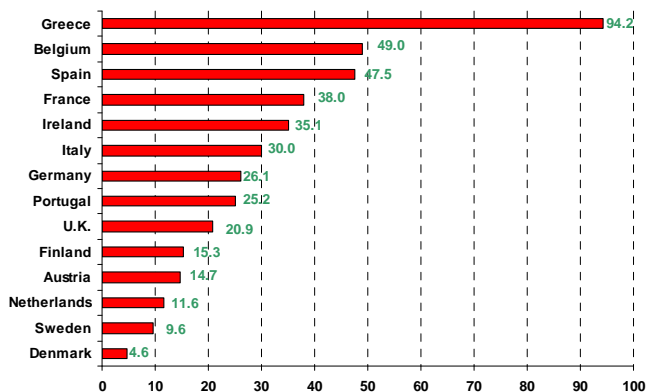
## Number of pharmacies across EU in 2007



Source: EFPIA 2008

Figure 7

## Number of pharmacies per 100,000 inhabitants in EU



Source: EFPIA, 2008

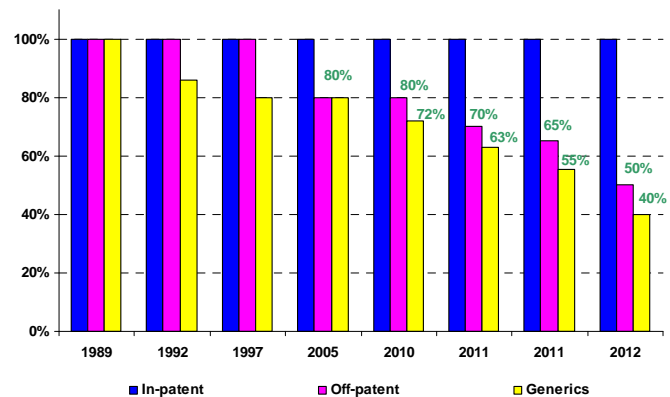
Lastly, the hospital price is the price at which public hospitals purchase pharmaceutical products and derives from the wholesale price reduced by 13%.

Under the MoU the Government started the collection of rebates from pharmacies with sales above a designated threshold against the payment due to pharmacies and the rebates from pharmaceutical companies. Moreover, the Government introduced an automatic claw-back mechanism (quarterly rebate) on the turnover of pharmaceutical producers so as to guarantee that the outpatient pharmaceutical expenditure will not exceed budget limits.

The price of medicinal products for which there is proof that the patent will expire was reduced by 20%. Under the MoU this price is reduced by 50%. The price of generic medicinal products was defined based on the 80% of the initial price of the original product; now this price is based on the 40% of the initial price. (Figure 8)

Figure 8

## Structure of pharmaceutical prices in Greece over 1989-2012



Source: PEF, FEK research 1989-2012, Eurobank Research

## Unpleasant truths

The last 20 years, prior to 2010, there were no clear measures to control pharmaceutical expenditure in Greece, neither in pricing, nor in reimbursement or quantity. Moreover, Social Security Funds reimbursed every product in market either was OTC, off-patent or very expensive. Under the MoU, the Ministry of Health had to introduce and implement in a short period of time almost all measures taken in other EU countries during the last decade. Moreover, health sector reforms set in the MoU have been hard to implement due to strong resistance by vested interests combined with the lack of timely data and effective monitoring mechanisms.

## Conclusions

The State has a double identity in pharmaceutical products market. On the one hand it has the role of the "buyer" as the social security funds cover the pharmaceutical care and on the other

hand the State is the one who regulates the prices of pharmaceutical products. The pharmaceutical policy of all Greek governments over the past 20 years has focused, from a macroeconomic perspective, on price regulation (supply-side) in order to control expenditure. Yet, pharmaceutical expenditure increased significantly due to the fact that this kind of intervention failed to control consumption volume (demand-side), which is determined by factors including the number of active physicians, doctors' prescribing behaviour and patient' demand. Note that the number of doctors' increased by 46% over the last decade. Furthermore, over the period 1995-2007 public expenditure as a share of total pharmaceutical expenditure rose from 70.9% to 94.6%. Public spending on pharmaceuticals amplified from €0.9bn in 1995 to €4.3bn in 2007 i.e. ca 400% increase in 12 years time. What's more, the pharmaceutical products' annual growth was very robust in the last decade; it was the highest in the EU. Yet, at the same period the sector of pharmaceutical products had a trade deficit which was growing very fast. In addition, a robust increase in imported pharmaceuticals and a decrease in domestically produced ones were recorded over the last decade.

Since May 2010 there has been an attempt to rationalise pricing policies in Greece. The government cut the wholesalers' profit margin by 2.6% and by ca 20% the pharmacists' gross profit margin. Note that Greece has the largest number of pharmacies per 100,000 inhabitants among EU countries (94.2 in Greece vs. 38 in France and 26.1 in Germany) in 2007. Moreover, the Government introduced an automatic claw-back mechanism (quarterly rebate) on the turnover of pharmaceutical producers so as to guarantee that the outpatient pharmaceutical expenditure will not exceed budget limits. Last but not least, under the MoU the price of generic medicinal products was defined based on the 40% (instead of 80% as prior to 2010) of the initial price of the original product. The price of off-patent medicines was reduced by 50% (instead of only 20% as prior to 2010).

All in all, the last three years, under the MoU, Greece focuses on policies to contain pharmaceutical expenditure by acting not only on the supply-side but on the demand-side as well.

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