Greece. Why a 100% debt-to-GDP before the crisis?
Michel Husson, March 24, 2015

In 2007, Greece's public debt was 103% of GDP (gross domestic product). This high level explains at least partly why Greece has been particularly affected by the crisis. This is why we deal with the period before the outbreak of the crisis (1988-2007). The public debt having this characteristic to transmit itself from one year to another, much of the current debt is the heir of past developments. This brief document seeks to quantify this 'legacy'. Following the method used in France by the Collective for a citizens’ audit of public debt, it leads to the following result:

Half of the Greek debt acquired before the crisis can be imputed to extravagant interest rates (between 1988 and 2000) and to a decline in government revenue from 2000 to the crisis. Without these slippages, it would have represented only 49% of GDP in 2007.

We can therefore consider that half of the Greek debt in 2007 was illegitimate because it was based on a drain on the wealth by the domestic or foreign creditors, and to the extent that the decline in government revenue has been beneficial essentially to the oligarchy or to the firms, without any return for the majority of the Greek people.

A brief history of the Greek debt (1988-2007)

Greek public debt rose from 2.2 billion euros in 1970 to 317.2 in 2014 (All the data come from the Ameco database established by the European Commission). It was multiplied by 21 in constant prices, and its growth seems to be exponential (Chart 1).

However, this is an optical illusion. If we look more precisely at the Debt-to-GDP ratio, we can observe four distinct phases (Chart 2):
• 1970-1980: low level and slow increase from 17.1% to 20.8%
• 1980-1993: strong increase from 20.8% to 91.2%
• 1993-2007: quasi-stabilization, from 91.2% to 103.1%
• 2007-2014: sharp increase from 103.1% to 175.4%
The components of the Greek debt

When the crisis broke, Greek debt was around 100% of GDP, while this ratio was around 20% in 1980. The question to be clarified is why the debt has increased by almost 80 percentage points of GDP, mainly between 1980 and 1993.

Each year, the increase in public debt can be decomposed in two terms:
- interest payments
- primary deficit (excluding interests) adjusted for the "stock-flow adjustment"

During this period, most of the increase in debt is clearly related to interest payments (Chart 3).
Table 1 below summarizes the contribution of different factors to the change in the debt-to-GDP ratio between 1980 and 1993. Interest payments contribute for 57% to the change in debt, and this proportion reaches 65% between 1988 and 1993.

Table 1

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Change in the debt-to-GDP ratio</td>
<td>70.4</td>
<td>36.0</td>
<td>34.4</td>
</tr>
<tr>
<td>of which: Interest payments</td>
<td>40.0</td>
<td>17.9</td>
<td>22.2</td>
</tr>
<tr>
<td>Primary balance</td>
<td>28.8</td>
<td>16.2</td>
<td>12.6</td>
</tr>
<tr>
<td>Stock-flow adjustment</td>
<td>1.6</td>
<td>2.0</td>
<td>-0.4</td>
</tr>
</tbody>
</table>

The burden of interest payments mainly depends on the "snowball" effect that triggers when the implicit interest rate paid to service government debt is higher than the GDP growth rate. When this ‘Interest-Rate-Growth Differential’ is positive, the debt-to-GDP ratio increases even if the primary fiscal balance (excluding interest payments) is zero.

The ‘Interest-Rate-Growth Differential’ is negative until early 1980 and then becomes positive during the next two decades, even reaching extremely high levels compared with the same indicator in France (Chart 4).

Between 1980 and 2007, the debt-to-GDP ratio has increased from 20.8% to 103.1%. This increase of 82.3 percentage points of GDP can be decomposed in two elements:

- 53.5 percentage points are related to the cumulative effect of interest payments (‘snowball effect’)
- 28.8 percentage points correspond to accumulated deficits (including stock-flow adjustments).

Chart 5 below illustrates this decomposition.
The impact of excessive interest rates

For two decades, the Greek debt was financed with excessive levels of interest rates that led to a sharp growth of debt. To measure the impact of these excessive interest rates, we define a benchmark interest rate by assuming a real interest rate that would have never exceeded 3%.

We compare this ‘benchmark’ rate with the actual observed rate (Chart 6). There is a considerable difference between both rates: on average over the period 1988-2000, the gap is more than 4 points per year. Although the chosen reference is conventional and therefore contestable, this differential is extravagant.

It is possible to assess the impact of these excessive interest rates on the dynamics of the Greek debt. The method is simple: we replace the effective interest rate by our benchmark, while retaining the same sequence of budget deficits. The result of the simulation is shown in Chart 7.
If the interest rate on Greek debt had not slipped between 1988 and 2000, the debt-to-GDP ratio in 2007 would have been 64.4% instead of 103.1%, a difference of 38.7 percentage points of GDP.

Chart 7
Impact of the interest rates (debt as % of GDP)

The impact of lower government revenue

The Greek economy is characterized by a chronic budget deficit, which is, in the long term, rather the result of insufficient revenue than of excessive expenditure. However, during the period before joining the euro, revenues steadily rose while expenses remained roughly constant as a share of GDP (Chart 8).

This clearly reflected the will to fulfil the Maastricht criteria, at least the standard of a public deficit below 3% of GDP.

We know that Greek statistics were rigged (with the help of Goldman Sachs), but the data provided today have largely been ‘cleaned’ and approved by the European Commission.

But, as soon as Greece joined the euro area in 2001, government revenue, always as a proportion of GDP, began to fall as quickly as it had risen. Then, from 2005, the rise in expenditure was accompanied by a slower increase in revenue.

To assess the impact on the public debt of this drop in revenue, we build a counterfactual scenario that assumes the government revenue would have remained roughly constant as a share of GDP from 2000 to 2007 (Chart 8).
This simulation gives the following result:

**If government revenue had not declined since 2000, the Greek public debt would have represented 86.2% of GDP instead of 103.1%, a difference of 16.9 percentage points of GDP (Chart 9).**

**A scenario combining the two effects**

The combination of these two scenarios (‘reasonable’ interest rate and maintained government revenue) leads to the result presented in the introduction and illustrated in Chart 10 below:

In 2007, the Greek public debt would have represented only 45.3% of GDP instead of 103.1%, a difference of 57.8% of GDP that can be decomposed into two elements: an interest effect (40.9 points) and a revenue effect (16.9 points).
Chart 10
Cumulative impact of the two scenarios