EUROPEAN POLICY CENTRE

Discussion Paper

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Fabio Colasanti

Financial assistance to Greece:

Three programmes

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EUROPE'S POLITICAL ECONOMY PROGRAMME

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About the Author

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EUROPEAN POLICY CENTRE

1. Introduction

"The money that was given to Greece never went to its people. The money went to Greek and European banks". This is what Greece's Prime Minister, Alexis Tsipras told the European Parliament in a speech on 7 July 2015. He repeated what many before him had already said. However, I believe this statement is just one of the many gross exaggerations about the financial support extended to Greece, – and it is not supported by the data. Many people still believe that the intervention of the euro-area governments and the International Monetary Fund (IMF) dealt almost exclusively with the Greek debt; that very little money was used to finance Greek public expenditure; that most Greek debt was reimbursed; that no cuts were made to the stock of Greek government bonds on the market; and, finally, that so far no cuts have been made to the debt of the Greek state towards the euro-area countries.

This paper will present the rather complex history and the main facts of the financial support extended to Greece by the countries of the euro-area and the IMF. This exercise will show the extent to which the perceptions mentioned in the previous paragraph are supported by the data, whether or not they are exaggerations, and whether or not they can be even considered correct. The paper discusses the reasons for and against a restructuring of the Greek public debt in 2010, the reasons for and the extent to which this was carried out in 2012 and highlights a number of important implications of the delay. In particular, it examines the probability of a restructuring in 2010 leading to a bigger cancellation in the Greek government debt. It also explains how the fact that the banks hold so much government debt is the result of incentives that have been created by the authorities to facilitate the issuing of government bonds. In addition, it will illustrate that very large capital flows from the countries with an excess of savings to those – mostly in southern Europe – with an excess of consumption and investment was a desired goal of the monetary union and was encouraged by explicit policy decisions. This paper furthermore shows the degree in which the Greek debt towards the euro-area countries has already been cut and discusses the scope for further cuts. Finally, it explains how both issues were and are still dominated by internal political considerations, both in the creditor countries and in Greece.

This paper does not discuss the economic policies implemented as a result of the various economic adjustment programmes, but only the modalities and the amount of the financial transactions extended in order to support the country. Therefore it does not address the fundamental question of how the very large sums of money that were put at the disposal of the Greek government could not have prevented the collapse of economic activity that the figures show, and thereby explain the fact that in 2015 the country experienced its seventh year of recession with a return to positive growth now predicted only for 2017. The answer to this question will have to come from other papers.

The paper presents the financial support that was extended to Greece from May 2010 to the end of 2015. The official documents contain almost all the relevant data, even if there are the usual small differences between the sources, the definition of the aggregates and the reference periods. However, these documents do not contain a full narrative of what happened over this five-year period and the language used is often difficult to understand for many lay readers. This in turn has probably contributed to the misperceptions previously referred to.

Many people are surprised by the fact that a small country like Greece has created a problem that the euro-area countries seem unable to come to terms with. They have difficulties in understanding how a relatively small problem can clog the workings of the financial system. At the same time, many people fail to grasp the size of the financial support extended to Greece, which was around €300 billion; a huge sum of money that dwarfs those that most governments have to find when they are faced with difficulties in their own public finance positions. However, although this is an extremely large sum of money, it still only constitutes a small fraction of the help extended to the European banks in the aftermath of the 2008/2009 financial crisis.

Most of the Greek public debt has been transformed into debt *vis-à-vis* official creditors (i.e. the taxpayers of the euro area countries), but more Greek public debt has been cancelled than has been reimbursed at face value. The creditors have not got off lightly; the restructuring of the Greek public debt cancelled almost 64 per cent of the value of the approximately €200 billion of Greek bonds that were withdrawn in 2012.

About half of the money that will have been lent to Greece under the three economic adjustment programmes will have been used to deal with the Greek public debt. The other half will have been used to finance Greek public expenditure. Without the EU's and IMF's help, the degree of austerity that the country would have experienced would have been much greater.

The decisions concerning how to help Greece were very time-consuming, often inadequate, needed substantial corrections and, in general, did not offer a very positive image of the European Union. Yet today the European monetary union is a much stronger and better managed construct. The European Union has taken a significant number of institutional steps forward even if much more still needs to be done. Moreover, it should not be forgotten that when the Greek crisis exploded, the other euro-area countries had serious problems of their own: the eurozone was recovering from the most severe recession since World War II, budget deficits had increased enormously in all countries and the average level of gross public debt had increased by ten points of GDP within the space of just one year.

Section two recaps the loans that have been extended to Greece between May 2010 and August 2015, the financial conditions that have been attached to these loans (maturities and interest rates) and shows how these have been dramatically modified over a period of just two years; with the current conditions being extremely concessional. It ends with some facts about the present level of the Greek public debt and the burden it represents on Greek economic policy. It demonstrates that the level of the Greek public debt has not increased much, contrary to what some people might believe. What *has* increased dramatically is the ratio between public debt and GDP, because of the severe reduction of the latter. Finally, this section comments briefly on the link between the size of the financial support extended and the budgetary adjustment path Greece has had to follow.

The third section examines how the financial help extended to Greece has been used. It expands upon the aforementioned conclusion that approximately half of the money lent to Greece will be used to address the problem of its public debt and the other half will have financed Greek public expenditure. In addition, it shows that the amount of money that will

have gone to the banks, the foreign banks or the euro-area banks represent a much smaller share of the total help afforded to Greece than is commonly believed. It also discusses the reasons why some people find these conclusions surprising. The main reason for this is that the results presented above are an average of three phases: the first – from May 2010 to the end of February 2012 – saw the reimbursement of €58 billion of bonds coming to maturity; the second – from March to December 2012 – saw the withdrawal of €167 billion of Greek Government bonds against the payment of only €41 billion in short-term European Financial Stability Facility (EFSF) bonds; the third, from 2013 onwards, saw very little activity on Greek Government bonds, as the amount of these bonds still in circulation was relatively small. Most people are aware of what was done in the first phase and are less informed about the subsequent two phases.

The fourth section describes the cuts in the Greek public debt that have been made until the present day: the two Greek Government bonds restructuring operations that were conducted in 2012 and the cuts in the effective value of the debt towards the euro-area countries. It opens with a discussion of the reasons that led to the initial decision to avoid a default and, later, suggested a change of course. It then presents the history and the facts of the two restructuring operations. The final part discusses the question of whether a restructuring operation in 2010 could have led to a larger cut in the Greek public debt. It concludes that it is unlikely that a restructuring at that time, i.e. at the beginning of the crisis, would have resulted in a larger cancellation of Greek Government bonds.

Finally, the last section presents some open policy issues that deal with public debt. These are not discussed in depth. The goal is to explain the issues and the main pros and cons of a change in the current arrangements. The first issue is specific to the Greek case and concerns the scope for further cuts in Greece's debt towards the euro-area countries. The other three are more general: why the banks hold so much government debt; why the banks have bought so much risky debt from countries with fragile public finances; and the strength of the case for drawing up rules on how to restructure the public debt of a euro-area country. A presentation of these issues is necessary to understand what has influenced the decisions taken since 2010 in extending financial assistance to Greece.

It is important to know that the banks hold large amounts of government bonds because the current prudential regulation encourages them to do so. It is important to know that many European banks started buying large amounts of government bonds from 'peripheral' countries because regulation encouraged them to do so and that a capital outflow from the countries with excess savings to the rest of the monetary union was an explicit goal of the endeavour. Finally, the decision concerning the restructuring of the Greek public debt also took a long time because the members of the IMF and the euro-area had decided to not even contemplate such a possibility when this had been first suggested by the IMF itself. In addition, it is important to understand that even now, the position that the euro-area countries are adopting on this matter is, at best, ambiguous.

Some parts present facts with which most readers should already be familiar. To speed up their reading, a series of questions and answers recap the main facts and conclusions. The reader will need to turn to the full text only if they are surprised by some answers.

2. The financial support for Greece

Responding to the request for financial support made by Prime Minister George Papandreou on 23 April 2010, the Eurogroup decided on 2 May to activate a line of bilateral loans to Greece and, on 9 May, the IMF decided to grant the country a 'stand-by loan'. These loans were accompanied by economic policy conditions that were formalised in a Memorandum of Understanding on Specific Economic Policy Conditionality[1].

These decisions were based on the idea that it was necessary to provide Greece with the financial resources that would enable the country to reimburse its bonds coming to maturity in order to avoid the default of a European Union member, which was furthermore a member of its own monetary union. A default could have had serious negative consequences for the interest rates on the public debt of other euro-area countries, especially those with fragile public finances.

At the same time there was a desire to spare the country the financial turmoil experienced by Argentina only nine years before. For this reason it was also decided to continue to finance budget deficits for a number of years, so as to allow a return to a healthier public finance situation with a more forgiving timeframe. Given the Greek Government's inability to borrow money on the capital markets, it would have been forced to already reach a balanced budget during the course of 2010 in the absence of external help. This would have entailed a measure of austerity far graver than the one the country has hitherto actually experienced. To give an idea of the additional restrictions the country would have had to endure, it is sufficient to say that Greece would not have been able to finance the more than €90 billion budget deficit that it has experienced over the period 2010-2014 (see section 2.3).

However, the major concern was that a Greek default might seriously hit a number of large banks and trigger a systemic crisis of the financial system; it was feared that a Greek default might constitute for the European financial system an event comparable to what the September 2008 bankruptcy of Lehman Brothers represented for the financial system of the industrialised world. In addition, a Greek default would lead the markets to believe that other countries with fragile public finances positions might follow. The pros and cons of a Greek public debt restructuring in 2010 will be discussed in greater detail in section 4.1.

Over a period of eight years, from 2010 to 2018, the euro-area countries and the IMF will have lent an exceptionally large amount of resources to Greece: almost €300 billion.

2.1 The programmes

In May 2010 it was believed that Greece would not be able to access the capital markets in a normal way for at least eighteen months. It was therefore decided to support the country for a period of three years to create a security margin and avoid the risk of a premature return to the market that, if unsuccessful, would have created a very negative

[1] Attachment II of European Commission 2010a.

precedent and hurt the future creditworthiness of the country (with possible negative spillover effects for other countries).

An estimate was produced of the country's financing needs for the next three years (relatively easy as far as the reimbursement of bonds was concerned, more difficult for the future budget deficits to be covered) and of what the country could have still obtained on the capital markets. This exercise led to an estimate of €190 billion for the gross financing needs, €80 billion of which was considered to be feasibly sourced from capital markets, thus leaving a shortfall of €110 billion, to be met with official loans[2]. This amount was to be provided by the IMF (€30 billion) and the euro-area countries (€80 billion).[3]

Table 1: Theoretical share of each euro-area country and actual contributions to the first €52.9 bn loan (Greek Loan Facility)

	BE	DE	IE	ES	FR	IT	CY	LU
%	3.58	27.92	1.64	12.24	20.97	18.42	0.20	0.26
€ Billion	1.942	15.165	0.347	6.650	11.388	10.008	0.110	0.139
	MT	**NL**	**AT**	**PT**	**SI**	**SK**	**FI**	**Total**
%	0.09	5.88	2.86	2.58	0.48	1.02	1.85	**100.0**
€ Billion	0.051	3.194	1.555	1.102	0.244	-.-	1.004	**52.9**

At the time, the EFSF[4] had not yet been created and the support from the euro-area took the form of bilateral loans from each individual country, reorganised by the European Commission into a single loan to Greece (the arrangement was dubbed the "Greek Loan Facility"). The shares apportioned to the different countries were proportional to the corresponding European Central Bank (ECB) capital amounts, which were determined on the basis of the economic and demographic weight of each country.

2 European Commission 2010a, table 4, page 58.

3 The disbursements to Greece were foreseen according to the following indicative calendar: €34.8 billion in 2010, €44.6 billion in 2011, €28 billion in 2012 and the last € 8 billion in the first half of 2013.

4 The European Financial Stability Facility (EFSF) was created as a temporary facility. It is a company under Luxembourg law set up in June 2010 by the euro-area countries at the time. It started operating in August of the same year.

Table 2: Gross Disbursements to Greece from the euro-area and the IMF (€ billion)					
	Date	EFSF	IMF	Total	Cumulative total
First Economic Adjustment Programme					
1.	May 2010	14.5	5.5	20.0	20.0
2.	September 2010	6.5	2.5	9.0	29.0
3.	December 2010/January 2011	6.5	2.5	9.0	38.0
4.	March 2011	10.9	4.1	15.0	53.0
5.	July 2011	8.7	3.3	12.0	65.0
6.	December 2011	5.8	2.2	8.0	73.0
Total first programme		***52.9***	***20.1***	***73.0***	
Second Economic Adjustment Programme					
1.	March / June 2012	74.0	1.6	75.6	148.6
2.	December 2012 / May 2013	49.1	3.2	52.3	200.9
3.	May/June 2013	7.5	1.8	9.3	210.1
4.	July / December 2013	2.9	1.8	4.7	214.9
5.	April / August 2014	8.3	3.6	11.9	226.8
	February 2015 [1]	-10.9		-10.9	215.9
Total second programme		***130.9***	***12.0***	***142.9***	
Total of the two first programmes		**183.8**	**32.1[2]**	**215.9**	
Third Economic Adjustment Programme					
1.	August / December 2015[5]	21.4		21.4	237.3
Overall total at end of December 2015		**205.2**	**32.1[2]**	**237.3**	

1) EFSF bonds transferred to the HFSH in March 2012 and returned in February 2015.
2) Greece started reimbursing the IMF in 2013. At the end of 2015, the balance still owed to the IMF was equal to SDR 13.7 billion (approximately €17.4 billion).[6]

Table 1 shows the agreed share of each country in the arrangement and the actual contributions made to raise the agreed €80 billion to be lent to Greece[7]. In the event, only €52.9 billion was actually disbursed during the lifetime of the first economic adjustment programme. Slovakia decided not to participate in the loan, Ireland and Portugal did not contribute to further disbursements once they themselves became recipients of euro-area support and the original programme was superseded by a new programme half-way through its implementation.

During the first months of the programme things broadly developed as expected. In July 2010 Greece was even able to raise €4.5 billion in short term notes at interest rates of between

5 Between August 2015 and the end of the same year, the ESM made cash transfers to Greece totalling €16.0 billion, as a first tranche of the loan foreseen under the third adjustment programme. This amount was disbursed in three instalments: € 13.0 billion in August, € 2.0 billion in November and the remaining € 1.0 billion at the end of December. The maturities of the capital reimbursements of this tranche range from 2034 to 2059. In December 2015, the ESM also transferred to the Hellenic Financial Stability Fund (HFSF) two set of notes, to be used for the recapitalisation of the Piraeus and Ethniki Banks, totalling € 5.4 billion.

6 IMF Website: https://www.imf.org/external/np/fin/tad/exfin2.aspx?memberkey1=360&date1key=2015-07-31

7 The initial figure of €80 billion was reduced by €2.7 billion when, in the course of 2010, Slovakia decided to withdraw from the support programme and both Ireland and Portugal stopped contributing when they requested euro-area support. The three Baltic countries joined the monetary union after 2010: Estonia in 2011; Latvia in 2014; and Lithuania in 2015.

4 and 4.6 per cent[8]. Then things started to deteriorate rapidly. In December 2010, the European Commission documents already mentioned difficulties in the implementation of the programme and macroeconomic outcomes falling short of the forecasts.

During the course of 2011 it became clear that the country's macroeconomic performance was much worse than what had originally been forecast: the contraction of GDP was substantially stronger than expected and there was no indication of an improvement during the rest of the year.[9] This had an obvious effect on the Greek public finances. At the same time, it was clear that the reform effort had lost intensity. There was the growing resistance of all the vested interests affected by the reforms on the one hand, while on the other, there was the deteriorating political situation. The finance minister was replaced, there was the announcement of a referendum on the terms a new adjustment programme, its cancellation and, in November, the resignation of Prime Minister Papandreou. As part of its ongoing analysis, the European Commission was already indicating in July 2011 that it had become very unlikely that Greece would be able to return to the capital markets in 2012 to the extent foreseen in the analysis of May 2010.[10]

As indicated in Table 2, the disbursements continued more or less in line with the indicative calendar that had been foreseen. After the € 38 billion of 2010, in 2011 an additional €35 billion was disbursed (25.4 from the euro-area countries and 9.6 from the IMF).

The second programme

In October 2011, it was decided to launch a second economic adjustment programme that would be accompanied by new loans for an additional €130 billion. While in the first programme it had been initially assumed that Greece could still have a limited access to the market, in the second and the third programmes it was recognised that the financing needs of the country would have to be met almost entirely by official sources. The IMF would provide €20 billion, but instead of using the 'stand-by' instrument, it would use the so-called Extended Fund Facility (EFF) that allows longer maturities for the loans. The euro-area countries would lend an additional €110 billion through the EFSF, which by that date had already become operational.[11] It was also foreseen to include in the disbursements under the second programme the amounts not yet paid out under the first programme.

Table 2 shows that during the period covered by the second economic adjustment programme (extended until 30 June 2015) the IMF disbursed €12 billion and the EFSF €130.9 billion, respectively. The lower than foreseen disbursements by the EFSF are due to the fact that €10.9 billion of EFSF bonds that had been transferred to the Hellenic Financial Stability Fund (HFSF) in March 2012 were not used, as the needs turned out to be lower than anticipated. These were returned to the EFSF in February 2015 and subsequently cancelled. In addition,

8 European Commission 2012b page 55 and Hellenic Republic Public Debt Bulletin n°59.

9 As already indicated, a discussion of the economic policy implemented in Greece is outside the scope of this paper. There are many documents on this subject. A notable paper is the ex-post evaluation of the first economic adjustment programme conducted by the IMF (IMF 2013a).

10 European Commission 2011b, page 14.

11 The foreseen disbursements were exactly: €19.8 billion from the IMF and €144.7 billion from the euro-area (European Commission 2012a, page 46).

the last instalment of €1.8 billion was never disbursed, as the conditions foreseen in the Memorandum of Understanding were not met.

Table 2 does not include a temporary loan for €35 billion that was extended to Greece for a few months in 2012. In July 2011[12] it had already been recognised that the forthcoming restructuring of the Greek public debt would have created a situation whereby Greek Government bonds would no longer have been eligible as collateral in the ECB monetary policy operations. This in turn would have reduced the possibility for the ECB to support the Greek financial system. To avoid this difficulty, it had been foreseen to create a 'buy back' scheme (officially called a 'collateral enhancement scheme') that would have enabled Greece to buy back its Government bonds posted as collateral by a party that was no longer able to fulfil its obligations. In order to enable the country to run this scheme, €35 billion of EFSF bonds with a one-year maturity were transferred to the country at the beginning of March 2012. The length of the operation was linked to the lifting of the 'default' rating by the three major credit rating agencies. The bonds were returned to the EFSF on 25 July 2012 and cancelled on 3 August 2012.[13]

The third programme

In July 2015, at the end of a difficult negotiation with the Government that was formed following the Greek general elections of January 2015, an agreement was reached for a third economic adjustment programme with a new loan provided by the euro-area countries, totalling a maximum of €86 billion, which would be made available through the European Stability Mechanism (ESM), the permanent mechanism inaugurated in October 2012. At the time of writing, it had not yet been formally decided if the IMF would take part in the new programme. Should the organisation decide to join in the programme its disbursements would reduce those now foreseen by the ESM by an equal amount. A first disbursement of €16 billion was made between August and December 2015.

Between the political agreement reached on 12t/13t July 2015 and the first disbursement from the ESM, Greece received a bridging loan of €7.16 billion from the European Financial Stabilisation Mechanism (EFSM)[14], which had also been used to support Ireland and Portugal. Given that this mechanism provides the guarantee of its borrowing from the European Union budget, the Council decision to grant the loan was accompanied by a joint declaration of the Commission and the Council to the effect that the EU member states not belonging to the euro-area would not incur costs because of the use of this instrument and the creation of a safeguard mechanism[15]. The bridging loan was reimbursed with the proceeds of the first disbursement of the ESM loan in August 2015.

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12 Eurogroup 2011a point 9 and Eurogroup 2011b point 14.

13 EFSF FAQ, pages 19-20; http://www.efsf.europa.eu/attachments/faq_en.pdf

14 Council decision 10991/15 of 17 July 2015.

15 Council Document 10994/15 of 16t July 2015. The SMP profits for 2014, plus another €160 million (coming from the EFSM loan itself, which explains why it was for the precise amount of €7.16 billion), were transferred to an account with the ECB, constituting a reserve to protect non euro-area member states from the risk of loss resulting from this loan. Deutscher Bundestag 2015a, Anlage 11 and:
http://www.consilium.europa.eu/en/press/press-releases/2015/07/17-eurogroup-statement-greece/

The intervention as a whole

Many people find it surprising that the problems arising from a relatively small country – less than two per cent of the Union's GDP – have dominated European economic policy for so many years. This surprise is understandable, even if the share of the Greek public debt in the total EU public debt in 2010 was much higher than the share of its GDP in the total GDP of the EU (four per cent of the euro-area's public debt), but it is not justified. There is no direct link between the size of a company, a bank, or a country and the consequences of a 'financial accident' it might provoke; Lehman Brothers was not a very large bank. For the same reasons that the bankruptcy of a not very large bank affected the whole financial system, there was a fear that the default of a relatively small country could spill over into a series of public finances crises in other euro-area countries and into a systemic failure of the whole European financial system.

Table 3: **Loans to Greece from the euro-area and the IMF** (€ billion)

	Euro-area	IMF	Total	Cumulative total
First economic adjustment programme	52.9	20.1	73.0	70.3
Second economic adjustment programme	130.9	12.0	142.9	215.9
Third economic adjustment programme	86.0	-	86.0	301.9
Reimbursements during the second programme[16]		- 13.1	- 13.1	288.8
Reimbursements during the third programme		- 10.4	- 10.4	278.4
Net total at the end of August 2018	**269.8**	**8.6**	**278.4**	

In any case, the size of the financial support given to Greece is staggering and larger than that of any other previous operation of this type. The €302 billion of loans under the three programmes – or even the net loans of €278 billion, taking into account the fact that during the second and the third programmes Greece will have reimbursed €23.5 billion to the IMF – represent more than twice the annual budget of the European Union in 2015 and more than 120 per cent of Greece's 2010 GDP, before it started to shrink dramatically. By comparison, the financial support extended to Ireland was equal to 41 per cent of its GDP, to Portugal 43 per cent and to Cyprus 55 per cent.[17]

The main reason for the exceptional size of the current intervention in Greece is the fact that previously support given to a country was usually extended in order to help it face a balance of payments crisis. In the past, hardly any interventions have taken place that were designed to avoid the default of a country on its public debt. A balance of payment crisis typically requires financing equating to a few points of GDP (rarely more than 15/20 points); a public

[16] The total IMF reimbursements during the third programme consist of €8.4 billion, due between August 2015 and 20 August 2108, plus €2 billion for two reimbursements that ought to have been made on 30 June 2015 and 13 July 2015, but were actually made at the end of July 2015 after the granting to Greece of a bridging loan of €7.16 billion via the EFSM. The bridging loan was reimbursed with the proceeds of the first disbursement of the ESM loan under the third programme. The reimbursement of 30 June 2015 (€1.508 billion) ought to have been made on the last day of the second programme. The reimbursement of 13 July 2015 (€456 billion) fell in the interval between the second and third programme.

[17] Percentages of GDP corresponding to the year in which the support was agreed.

debt crisis involves much larger amounts (62 per cent of GDP in the case of Argentina, 137 per cent of GDP in the case of Greece).

Obviously there is almost always a link between a balance of payments deficit and high public deficits. The latter tend to fuel increases in domestic demand that often surpass the capacity of the domestic economy. In the case of Greece, substantial increases in public and private debt led to many years of a level of domestic demand that was more than ten per cent higher than its GDP. This in turn was reflected in large current account deficits. Between 2000 and 2009, the cumulated negative current account balance of the country was more than €230 billion, a figure roughly equal to the GDP of 2009.

This huge cumulated deficit was financed by external debt which exacted a substantial cost in terms of yearly interest outflows from the country. To have a better understanding of the severity of the Greek balance of payments situation – a constant problem throughout its economic history – it is useful to consider that Italy, another country that suffered a significant loss of price competitiveness during the first years of monetary union, experienced a cumulative current account deficit over the same ten year period (2000-2009) of €165 billion (while its GDP is 7.5 times the size of Greece[18]). Portugal – another country that had to request support from its European partners and whose GDP is almost equal to that of Greece – had, over the same period, a cumulative current account deficit of €156 billion.

Question N° 1: ***How much money will have been lent to Greece via the three economic adjustments programmes?***

If the third programme is implemented as foreseen, Greece will have received around €278 billion. This figure is the difference between, on the one hand, the disbursements already made and those foreseen and, on the other, the reimbursement *vis-à-vis* the IMF between 2013 and August 2018. Of this amount, around €270 billion will have been lent by the euro-area countries and €8.6 billion by the IMF. At the time of writing it had not yet been decided if the IMF would take part in the third programme. Any contribution coming from this organisation would reduce the foreseen ESM loans by the same amount.

Question N° 2: ***How much has already been disbursed to Greece?***

By the end of December 2015 €237.3 billion (€222.2 billion net of reimbursements to the IMF for € 15.1 billion), had been transferred to Greece. The euro-area countries have disbursed €205.2 billion and the IMF €32.1 billion (€17 billion net of the reimbursements).

Question N° 3: ***Which instruments are available to the euro-area to help countries in need?***

When the Greek crisis appeared, the European Union had no facilities to help countries in need, apart from a medium-term financing facility created for the benefit of non-euro member states[19], with limited resources. The support given under the first programme comprised a series of bilateral loans brought together by the European Commission into a single loan. The mechanism was called the **Greek Loan Facility** (GLF). The actual contributions of each country are indicated in Table 1.

18 Comparison between the average values for the 2000-2009 period.

19 The medium term balance-of-payments facility was created, on the basis of art. 143, through Council Regulation 332/2002 of 18 February 2002. Thus far, the facility has been used to support Hungary (2008), Latvia (2009) and Romania (2009).

On 11 May 2010, the **European Financial Stability Mechanism** (EFSM) was created[20]. The facility, based on the mechanism already operating to help third countries experiencing balance of payments difficulties, enables the European Union to borrow funds of up to €60 billion on the capital markets using the guarantee of its budget. This facility was used to fund part of the assistance to Ireland (€22.5 billion), to Portugal (€26.0 billion) and to extend a bridging loan to Greece in July 2015 (€7.2 billion).

In June 2010 the euro-area countries created, on a temporary basis and via an agreement among the participating countries, the **European Financial Stability Facility** (EFSF). This facility could borrow funds of up to € 440 billion on the capital markets and relend them to countries in difficulty. On 1 July 2013, the EFSF ceased to be active.

On 2 February 2012, the **European Stability Mechanism** (ESM) was created. This is the permanent crisis response facility of the euro-area with the ability to borrow and lend up to €500 billion. The ESM became operational in October 2012.

Question N° 4: ***Through which facilities has the euro-area lent money to Greece?***

The first loan to Greece, totalling €52.9 billion, was extended under the **Greek Loan Facility** (bilateral loans).

The €130.9 billion of the second programme was lent through the **EFSF**.

The **EFSM** was used to extend Greece a bridging loan of €7.2 billion in July 2015.

The support under the third programme, totalling €86 billion (or less should the IMF decide to take part in the third programme) is being disbursed through the **ESM**.

2.2 The financial conditions attached to the loans

When the Greek crisis broke out, the reaction of most of the euro-area governments was one of surprise and outrage, which betrayed a lack of awareness of the nature of the problems besetting the Greek economy. The surprise was due to the discovery that the 'multilateral surveillance' procedures had not been able to adequately foresee the impending crisis, let alone prevent it. The outrage was directed towards the misrepresentation of the state of the Greek public finances. The misrepresentation was certainly a justified cause for concern in terms of relationships between partners, but its effect on the diagnosis and the design of the corrective measures, while real, was not an important factor in the shaping of the initial intervention. Far more important were both the lack of awareness about the severity of the Greek economy's structural problems and the limits to the political willingness to extend larger loans (see section 2.4).

The inadequacy of the first decisions was shown by the need to both rapidly and thoroughly revise the initial plans. This manifested itself in the need to decide on a second adjustment programme halfway through the implementation of the first one, as was explained in the previous section. This was confirmed by the decision to engineer a substantial restructuring of the Greek public debt after having initially decided to avoid any potential default

[20] Council regulation 407/2010 of 11 May 2010.

(see section four). The necessary change of direction is also very visible in the fundamental modifications progressively introduced in the maturities and the interest rates applied to the Greek loans. In the following section these changes will be discussed.

The maturities

The maturities of the first loans (Greek Loan Facility) were initially determined according to those usually attached to IMF operations: three years without any reimbursement, followed by the reimbursement of the whole principal in eight equal quarterly instalments, which implied an average loan maturity of four years, and the complete reimbursement of the loan by the end of the fifth year[21]. It was assumed that after the end of the programme (i.e. from mid-2013), Greece would have been able to return to the capital markets under normal (pre-crisis) conditions and borrow the necessary resources in order to reimburse the loans from the IMF and the euro-area[22]. From mid-2013 onwards there was to be a reversal of what had happened in the previous three years: from 2010 to 2013 most of the Greek public debt was due to have been transferred from private creditors to governments and official institutions, from mid-2013 onwards there was to be a return to a normal situation (the public debt being held by private investors).[23]

Between March 2011 and the end of 2012 various changes were made to the maturities of the Greek loans. In March 2011, given the deterioration in the economic situation of Greece, the period without reimbursement ('grace period') was extended from three to four and a half years and the average maturity was extended from four to seven and a half years with the final reimbursement due at the end of the tenth year.

During the European Council meeting of 21 July 2011 it was agreed that further assistance was required. Therefore, it was decided that the future EFSF loans would have extended maturities of between 15 and 30 years, with a grace period of 10 years. In November 2012, the Eurogroup decided to extend the maturities of the existing loans by another 15 years.

The interest rates

The interest rates applicable to the first Greek loans from the euro-area (Greek Loan Facility) were also similar – but slightly higher – to those applicable to the IMF loans (cost of borrowing plus 300 basis points). The variable interest rate was determined through a mark

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21 European Commission 2010b, box 13, page 55.

22 In the heat of the political debate that surrounds the support extended to Greece, some maintain that the creditors are forcing Greece "to repay its public debt", something that no country is doing to any significant extent. This charge is preposterous. It would be in the Greek public interest to one day be able to reduce its public debt through budgetary surpluses, but this is a very long-term perspective that has no bearing on the current policy discussions.

23 Christian Odendahl, of the Centre for Economic Reform, an author very critical of the position taken by the euro-area governments and who calls for a haircut on the Greek public debt, has put forward an interesting idea. He suggests that when Greece can return to the market, the government bonds that it will issue will need to be declared 'senior' to the official debt with the euro-area countries. In the case of difficulties, the Greek Government should give priority to servicing these bonds relative to the official loans. This idea has some merits, but it reminds us that the discussions on the Greek crisis will continue for many more years to come.
http://www.cer.org.uk/insights/lighten-load

up on the three-month Euribor[24] rate. For the first three years the mark-up was equal to 300 basis points (three percentage points) and was due to increase to 400 basis points (four percentage points) afterwards. In addition, there was a one-off 'commission to cover the technical costs equal to 50 basis points on the amount of each disbursement. These high interest rates were designed to encourage Greece to implement the adjustment programme in order to be able to quickly return to the capital markets, where it might be able to obtain lower rates.[25]

In March 2011, when faced with the first signs of faster than expected deterioration in the economic situation, the Eurogroup decided to reduce the mark-up by 100 basis points for each period. On 21 February 2012, the Eurogroup once again lowered the interest rates on these loans, which would have become equal to the three months Euribor, plus 150 basis points retroactively from 15 June 2011. On 13 December 2012, the Eurogroup went further and lowered the mark-up on the three-month Euribor rate for these loans to only 50 basis points[26] (cf. Table 4).

The EFSF loans' interest rate is determined on the basis of the cost of borrowing the funds by the facility plus two commissions ('guarantee commitment fee' and 'service fee') which were intended to cover the operating costs of the EFSF and constitute a small reserve. In November 2012, the Eurogroup decided to cancel the first commission (with estimated savings for Greece of €2.7 billion for the duration of the loans).[27] In June 2015, the average interest rate on the EFSF loans was 1.35 per cent.[28]

During the same November 2012 meeting, the Eurogroup decided to also defer the interest payments on the EFSF loans for ten years (Greece will have to pay interest on the deferred interest payments). The deferral does not apply to the loans made to enable the restructuring of the Greek public debt in March 2012 (PSI and Interest Bond facilities; €34.6 billion, about 25 per cent of the EFSF loans).

Unfortunately, the euro-area countries, after having substantially reduced the interest rates paid by Greece, have become less transparent on the maturities, the actual interest payments made by the country and the precise rates of interest paid. It would be preferable to be able to justify this on account of the modesty of the benefactor who does not wish to advertise his generosity. Unfortunately, the opacity is probably due to the desire to disguise the implicit burden on the creditors' public finances that resulted from both the lengthening of the maturities and the lowering of the interest rates.

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24 The Euribor (acronym of EURo Inter Bank Offered Rate) is a reference rate, calculated daily, that indicates the average rate at which the major European banks conduct their transactions in euro.

25 The documentation of the Italian "Camera dei Deputati" for the discussion of the decree authorising Italy to take part in the bilateral loans of 2010 (DL 67/2010) indicates in its 'technical report' that, on the basis of the current Euribor rates and taking into account the foreseen mark-ups and commissions, Greece would have had to pay an interest rate of 4.15 per cent during the first three years and 5.15 per cent from the fourth year while the medium/long-term funding cost for the Italian government had been, in the first four months of 2010, "less than two per cent" (Camera dei Deputati, 2015a).

26 The countries benefitting from a support programme (Portugal and Ireland) have been exempted from this reduction for the period of their programmes (European Commission 2012b, page 53).

27 European Commission 2012b, page 53.

28 ESM 2015b.

Table 4: Conditions attached to the euro-area loans disbursed thus far			
Instrument	**Amount (€ billion)**	**Average maturity**	**Current rate of interest**
Greek Loan Facility (bilateral loans)	52.9	30 years	Three months Euribor plus 50 basis points
European Financial Stability Facility			
PSI Facility (public debt restructuring)	29.7	31.1 years[1]	1.35 per cent in June 2015
Interest Bond Facility (public debt restructuring)	4.9		
Master Financial Assistance Agreement			
- Bank recapitalisation	37.3		1.35 per cent in June 2015. The payment of interest is deferred until December 2022
- Rest of the programme	59.0		
Total of the first two programmes	**183.8**		
Financial Assistance Facility (third programme)	21.4	+/- 30 years	+/- 1 per cent[29]
Total at the end of 2015	**205.2**		
Sources: ESM "FAQ on assistance to Greece" and "ESM Annual Report 2014". 1) In September 2015.			

This is the information that I was able to obtain. During the first adjustment programme (2010-2011), Greece paid €1.6 billion in interests on the Greek Facility Loans[30]. In the three years covered by the third economic adjustment programme (August 2015 to August 2018) Greece will pay on its euro-area loans approximately €3.8 billion: € 1.8 billion on the EFSF loans granted for the restructuring of the Greek public debt in 2012 (PSI and Interest Facility loans), which have not been deferred; approximately €1 billion on the initial €52.9 billion loan and approximately €1 billion on the new ESM loan under the third programme[31].

One difficulty with the bilateral loans dubbed the Greek Loan Facility was the fact that the cost of funding the loans to Greece was different from one country to another. This difficulty has now disappeared thanks to the creation of the EFSF and the ESM. In the initial agreement on the Greek Loan Facility[32] there was a provision (Annex III, 'Special Case of Higher Funding Costs') allowing a member state whose funding costs might be higher than the interest rate paid by Greece to raise the issue with the European Commission. If the request was deemed justified, an amount would be transferred from the interest received by other member states. However, if this transfer would have resulted in another state receiving less than its own funding costs, the Commission would have brought the matter to the attention of all signatories for discussion.

29 ESM 2015d and ESM 2015f. The precise interest rate on this loan will be determined at each disbursement. For the first tranche of €13 billion in August 2015, this was equal to the funding cost for the ESM resulting from its so-called 'Diversified Funding Strategy', plus a mark-up of 10.5 basis points and an up-front Service Fee of 50 basis points. To these elements must be added a 'Commitment fee', determined on a yearly basis which in turn depends on some capital markets characteristics ("negative cost of carry").

30 European Commission 2012a, page 45.

31 European Commission 2015b.

32 Intercreditor Agreement, (Ireland 2010).

I do not know if this provision was ever applied, but it constitutes the recognition of the existence of a possible problem that would require a measure of solidarity among the creditors. However, the provision was conceived when the interest rates paid by Greece were rather high. After the reductions decided in 2012 it is difficult to see how the mechanism could have operated, notwithstanding the fact that the possibility of a member state having higher funding costs than the interest rate paid by Greece had increased strongly. Given that the mark-up for the interest rate on these loans is applied to the three-month Euribor and most member states borrow at much longer maturities, it is to be expected that a number of countries must be in a situation where the rate of interest they receive from Greece is lower than their own funding costs. Unfortunately, there seems to be no publicly available information on any application of the burden-sharing provisions and on the precise costs – if any – of these loans for the exchequers of the euro-area countries.

The mechanism for the determination of the interest rate to be paid by Greece for the EFSF and ESM loans is based on the funding costs of these two organisations. The values indicated previously – 1.35 as the average interest rates on the EFSF loans and around one per cent for the latest ESM loan – reflect the historically low level of interest rates that prevail on the European capital markets at the moment. When interest rates will increase, thereby returning to a more 'normal' level, the interest rate paid by Greece will also increase. The establishment of these two facilities allows Greece to benefit from the extremely high creditworthiness of the organisation, which in turn is enabled by the guarantee of all the euro-area member states.

While the euro-area loans are in euro, the IMF loans are in Special Drawing Rights (SDR), which introduces an exchange rate risk for Greece. Indeed, the recent weakening of the euro relative to the dollar and other currencies has already somewhat increased the cost of the IMF reimbursements. During the first two adjustment programmes Greece paid interests equal to SDR 2.8 billion (about €3.3 billion) to the IMF. During the period covered by the third programme, Greece will pay SDR 1.15 billion (about €1.5 billion) in interest to the IMF.[33]

A substantial change

Today the maturities of the first loans to Greece (Greek Loan Facility) vary between 2020 and 2041[34]; those of the EFSF loans under the second programme between 2023 and 2054[35] and those of the first instalment of the third programme between 2034 and 2059[36]. The interest rates vary from the 1.35 per cent of the EFSF loans to the Euribor plus 50 basis points on the first €52.9 billion loan (Greek Loan Facility). In addition, interest payments on most of the EFSF loans have been deferred to December 2022 (see Table 4).

To give a better feel for the reductions in the interest rates agreed by the Eurogroup (their impact will be discussed in more detail in section 5) it is perhaps useful to remember that in 2010 'Euribor plus 400 basis points plus the service commission' (the interest rate to be

[33] IMF website: https://www.imf.org/external/np/fin/tad/exfin2.aspx?memberkey1=360&date1key=2015-07-31

[34] WSJ 2015a.

[35] ESM 2015e.

[36] ESM Website; http://www.esm.europa.eu/assistance/Greece/Repayment%20schedule.htm

applied after the third year) equated to an interest rate of more than five per cent[37]. Today, 'Euribor plus 50 basis points' means a rate of interest of around half a percentage point (in November 2015, the three-months Euribor was just below zero).

The initial conditions of the euro-area loans to Greece were similar to those of the standard IMF interventions. The current conditions are closer, if not more concessional, to those attached by the World Bank on loans given to low-income countries.

Question N° 5: ***When will Greece have to reimburse the loans received?***

The maturities of the first euro-area loan to Greece, the Greek Loan Facility, are today between 2020 and 2041, those of the loans of the second programme (EFSF) fall between 2023 and 2054 and those of the first instalment of the loan under the third programme are between 2034 and 2059.

The reimbursement of the IMF loans started at the end of 2013 and will continue until 1 August 2030.

Question N° 6: *What rates of interest does Greece pay on these loans?*

The interest rate on the **Greek Loan Facility** (€52.9 billion of bilateral loans from 2010) is equal to the three-month Euribor plus 50 basis points. In December 2015, this just below half a percentage point.

In June 2015, the average interest rate on the **EFSF** loans was 1.35 per cent. But interest payments on the largest part of these loans, €96.3 billion out of a total of €130.9 billion, have been deferred to December 2022.

The €86 billion of the third programme will carry an interest rate based on the **ESM** funding costs**;** on the tranche paid in August 2015 this was "around one per cent".

The **IMF** loans have an interest rate equal to the funding cost plus a mark-up of 300 basis points; in December 2015 this meant a rate of interest of around 3.6 per cent.

2.3 The trend of Greek public debt and the burden of its service

It is often stated that the economic policies implemented in Greece led to a strong increase in the country's public debt and that this high debt level is severely constraining its economic policy. In fact, the absolute level of the Greek public debt has not changed much, notwithstanding the substantial budget deficits recorded since 2010. What has increased enormously is the ratio between debt and GDP because of the very severe recession, which has shrunk the size of Greece's annual income by a quarter. On the other hand, it is true that interest payments represent a significant burden on Greek public expenditure, but this burden is lower than that experienced by other euro-area countries, including some that have a much lower debt to GDP ratio. The debt reimbursement does not represent a significant problem in the short/medium term as the repayments on the euro-area loans begin in 2020 and most of the debt is owed to official creditors. This section will now look at these issues in detail.

[37] See the documentation of the Italian "Camera dei Deputati" for the discussion of the decree authorising Italy to take part in the bilateral loans of 2010 (DL 67/2010). It indicates that, on the basis of the then prevailing Euribor rates and taking into account the foreseen mark-ups and commission, Greece would have had to pay a rate of interest of 5.15 per cent from the fourth year on.

Table 5: Stock of Greek Government bonds between May 2010 and September 2015
(euro billion)

Bonds in circulation in May 2010		**319.8**
a) Full reimbursements between May 2010 and the beginning of March 2012	- 58.0	261.8
b) Bonds withdrawn in March 2012	- 198.1	63.7
c) Long-term government bonds issued as compensation in March 2012	62.4	126.1
d) Bonds bought back in December 2012	- 31.9	94.2
e) Full reimbursements in the course of 2012	- 8.1	86.1
'Holdouts'	1.0	
ECB and euro-area central banks	7.1	
f) **Bonds in circulation at the end of 2012**		**86.1**
Bonds held by the ECB and some euro-area central banks[38]	49.1	
Long term bonds issued in March 2012 and not resold in December	30.5	
'Holdouts'	6.5	
g) Five-year bonds issued in April 2014	3.0	89.1
h) Full reimbursements between the end of 2012 and Sept. 2015 (f + g – i)	- 29.4	59.7
Bonds held by the ECB and the euro-area central banks[4]	25.9	
'Holdouts'[4]	3.5	
i) **Bonds still in circulation at the end of September 2015**[3]		**59.7**

1) Definition used for the exchange operation of March 2012 that includes ten billion of bonds issued by other public sector bodies, but with a state guarantee. The figure for May 2010 is obtained by adding to the amount of bonds on which the exchange applied (205.6) the bonds excluded as held by the ECB and the euro-area central banks (56.2) and those reimbursed between May 2010 and the beginning of March 2012 (58.0). 2) PDMA, Hellenic Republic Public Debt Bulletin N° 69 3) PDMA, Bulletin N° 79 4) Estimates based on the stocks at the end of 2012.

When the crisis became official, at the end of April 2010, the absolute amount of the Greek public debt is estimated to have been around €311 billion[39]. This represented a percentage of 137.5 relative to the Greek GDP of 2010. However, this is the percentage that we can calculate today with definitive statistical data and, above all, after the switch from the ESA95 system of national accounts to the new ESA2010 system that entailed a significant number of modifications, especially concerning the definition of public debt[40]. When the crisis emerged, the figure that was usually quoted was a debt/GDP ratio of around 118/120 per cent.

38 The amount held by the ECB on 31 December 2012 due to SMP operations was €33.9 billion (see ECB Press Release of 21 February 2013; https://www.ecb.europa.eu/press/pr/date/2013/html/pr130221_1.en.html)

39 The figure has been obtained by linear interpolation to the end of April 2010 between the national accounts figures at the end of 2009 and at the end of 2010. The increase relative to end 2009 is €9.8 billion, a figure in line with the increase of the 'medium and long term securities' of central government appearing in the Financial Accounts of the Greek central bank for the first quarter of 2010. The extrapolation of the quarterly increase to four months yields a figure of €9.7 billion.

40 In the main document of the European Commission on the first economic adjustment programme, the level of Greek gross public debt at the end of 2009 is €273.41 billion. According to current data, the figure for the same aggregate at the end of 2009 was, in reality, €301.0 billion.

According to the national accounts data, at the end of 2014, the gross level of Greek public debt was €317 billion[41] (according to the definition used to check compliance with the budgetary policy criteria), whereas at the end of 2009 this amount was €301 billion. An increase of only € 16 billion, notwithstanding the fact that in the five years from 2010 to 2014 Greece experienced significant budget deficits (a cumulative amount of €92 billion) and conducted financial transactions (mainly acquisition of shares in various bodies, especially banks) that did not show up in the annual deficits, but nevertheless still increased its public debt by another €34 billion[42]. This small increase in the gross Greek public debt is due to the 2012 cut that will be presented in section four.

What has increased markedly is the ratio between the level of gross public debt and the GDP of the country, almost entirely because of the very strong contraction in the nominal value of the latter: in 2009, Greek GDP was €237.5 billion; in 2014 it was only €177.6 billion, a reduction of around 25 per cent[43]. As a result, the debt/GDP ratio, which was around 137 per cent in May 2010, had reached 179 per cent by the end of 2014.

The structure of the Greek public debt

Table 5 and Chart 2 summarise the interventions carried out on Greek Government bonds, (GGB)[44]. The table defines Greek Government bonds as they were identified for the restructuring operation of 2012; i.e. it includes in the figures for the period before March 2012 the € 10 billion of bonds issued by public bodies that are not part of the 'general government' aggregate, but that carried a Greek state guarantee and were included in the restructuring operation.

41 It is difficult to estimate the level of the Greek gross public debt at the present time. This aggregate is bound to be substantially affected by the strong increase in the amount of arrears towards government suppliers that took place in the first half of 2015 according to various reports and for which there are no reliable estimates. It will be necessary to wait for the next official data from the Greek and European statistical offices.

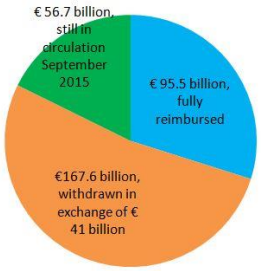
42 Under the second programme, Greece received €37.3 billion for the recapitalisation of the banks (48.2 less the €10.9 billion of bonds returned in February 2015). The figure for the amount of 'financial transactions' impacting the gross debt levels comes from Eurostat, 'Reporting of Government Deficits and Debt Levels', Greece; http://ec.europa.eu/eurostat/documents/1015035/7039947/EL-2015-10.pdf

43 Given the reduction in the level of prices, the reduction in the nominal value of GDP is greater than the real GDP (around 22 per cent in the same period)

44 There exists a difference between the total amount of Greek Government bonds in circulation and the level of the Greek gross public debt. This is not only due to some differences in definitions and methodology (for instance, government bonds are issued by the 'central government' aggregate, while the public debt is relative to the wider aggregate 'general government'), but also due to the fact that the public debt includes very short-term lending (three or six months 'T-bills' and 'Repos') and some small loans contracted by other bodies that are part of 'general government'.

At the outbreak of the crisis there was €320 billion worth of Greek Government bonds on the market. The operation, which was carried out with the help of the IMF and the euro-area led, until the end of September 2015, to the reimbursement of €95.5 billion of these bonds (see Chart 1), around 30 per cent of the total initially on the market and a much smaller amount than some believe.[45] The bondholders also received € 41 billion (€29.7 + €11.3 billion) of short-term EFSF bonds that were delivered together with €30.5 billion of new long-term Greek Government bonds (consolidated figures for the two 2012 operations) against the withdrawal of €198.1 billion of old Greek Government bonds. This is certainly money that went to the bondholders, but it represents a very partial compensation of the nominal value of the bonds handed in[46]. In characterising the nature of the intervention on the Greek public debt, the €95.5 billion received by the creditors (or €129.8 billion if one includes the payments made for the debt restructuring) should be set against the €126.6 billion of cancelled bonds (167.6 minus 41.0).

Chart 1: Greek Government Bonds on the market in May 2010



At the end of September 2015, Greek Government bonds totalling €59.7 billion were in circulation[47], around 19 per cent of the total debt of the aggregate 'Central government' (in quantitative terms very close to the amount of the 'public debt'), which at the same date was, according to the Greek Agency for the Management of Debt, €314.5 billion[48]. On the same date and according to the same source, more than two-thirds of the Greek public debt was represented by the debts *vis-à-vis* the IMF and the euro-area (€214.1 billion, equal to exactly 68.1 per cent of the total debt). The remaining 13 per cent was made up of smaller amounts among which the most significant are the short-term bills, the 'Repos' and the overdraft with the Greek central bank.

45 This amount consists of the €58 billion of bonds that came to maturity between May 2010 and the beginning of March 2012; the €8.1 billion of reimbursements made between March 2012 and the end of the same year and the €29.4 billion reimbursed between the end of 2012 and the end of September 2015. This last amount, totalling €29.4 billion of reimbursed bonds, results from the difference between the figure for the medium- and long-term bonds in circulation at the end of September 2015 (Pdma Bulletin n° 79) and that of the similar bonds in circulation at the end of December 2012 (Pdma Bulletin n°68), augmented further by the € 3 billion of five-year bonds issued on 17th April 2014 (Pdma Bulletin n° 74).

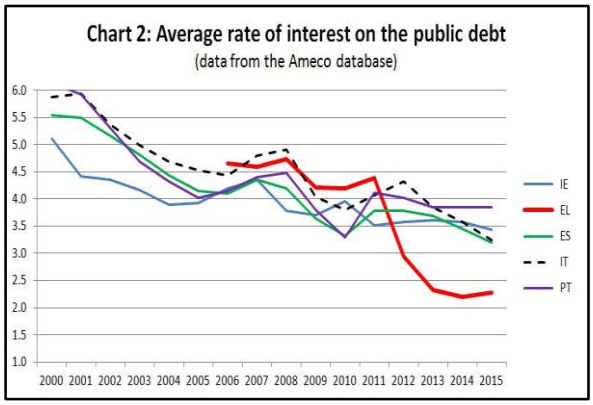
46 The sum of the bonds fully reimbursed until the end of September 2015 (€95.5 billion), of those "restructured" (€167.6 billion), of those still in circulation at the end of September 2015 (€59.7 billion), minus the €3 billion of new bonds issued in April 2014, minus the €10 billion of bonds issued by bodies that are not included in the aggregate 'general government' but were included in the restructuring as they carried a state guarantee, gives a figure of €309 billion for the bonds in circulation in April 2010. This is very close to other estimates of the stock of bonds in circulation in April 2010.

47 The €3 billion difference compared to the figure in the chart is due to the five-year bonds issued in April 2014.

48 Hellenic Republic Public Debt Bulletin N° 79.

The interest rate burden

The interest rate that Greece pays for its loans from the IMF is, at the moment, around 3.6[49], this being for loans that have shorter maturities than those from the euro-area. The EFSF/ESM lends to Greece at much lower rates than the IMF and even at somewhat better rates than those applied to the loans granted to Ireland and Portugal. The maturities of the loans to these two countries are not very different (between 2029 and 2042 for Ireland and between 2025 and 2040 for Portugal), but the interest rates are somewhat higher. By the end of 2014 (November), the interest rate paid by Ireland on the EFSF loans was around 2.3 per cent and that paid by Portugal[50] was around 2.1 per cent compared to the 1.35 per cent paid by Greece.[51] This difference is largely explained by the funding techniques used by the EFSF and the ESM. Initially, these organisations were issuing fixed rates notes with the same maturity of the loans to the beneficiaries ('back-to-back'). Later they moved towards issuing bonds at the best conditions available on the market and making the disbursements out of the financial resources pool thus created.[52] The first loans to Ireland and Portugal carried interest rates just below three per cent. Over time, the differences between the interest rates paid by the beneficiaries of EFSF/ESM loans should decline.[53]



Furthermore, as already seen, the interest payments on around three-quarters of the EFSF loans have been deferred to December 2022. Finally, on the initial loans, the €52.9 billion of the Greek Loan Facility, Greece pays an interest rate equal to the three-month Euribor plus 50 basis points, which – at the end of 2015 – equates an interest rate of just below half a percentage point. To enable a better understanding of the concessional character of these loans it is useful to compare their rates with the interest rates that some euro-area countries were paying at the same date to finance their public debt (rates for ten-year bonds): Germany, 0.6 per cent; France, 0.9 per cent; Belgium, 0.9 per cent; Italy, 1.6 per cent; Spain, 1.8 per cent. On the Greek Loan Facility funds Greece pays interest rates lower than those paid by Germany on its ten year bonds. But even the interest rate that Greece pays on its EFSF loans, 1.35 per cent in June 2015, is lower than what Italy and Spain pay on the capital markets for

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49 The rate of interest on the IMF loans is based on the funding cost plus a mark-up of 300 basis points (three percentage points). The figure of 3.6 per cent, as a result of the application of this rule to the market conditions of mid-2015, is indicated in the ESM report for 2014 (ESM, 2015b, page 29).

50 Ireland has also received support from the EFSM (€22.5 billion), the IMF (€22.5 billion) and the United Kingdom, Sweden and Denmark (€4.8 billion). Portugal has also received support from the IMF (€26 billion) and the EFSM (€26 billion).

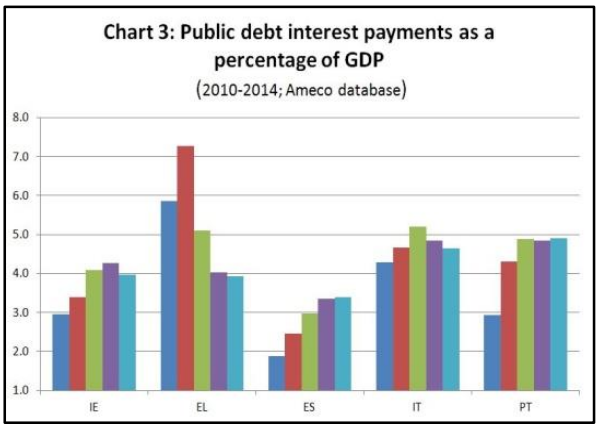
51 ESM 2015b, pages 43-44.

52 In 2014, the EFSF was rightly proud of the fact, that in application of the new funding policy, it managed to place on 22 July 2014, a 30-year bond, "the first such maturity it has issued, for a total of €4 billion. This bond matches well with the EFSF's underlying long-term loans. It allowed the issuer to lock in a historically low yield of 2.392% and, at €4 billion, represented an exceptionally large size for a supranational issuer." "The debt market industry awarded it the 'Deal of the Year' in the Euro-supranational category of the Global Capital Awards©". ESM, 2015b, page 48. In November 2015, the ESM did even better by placing a 40-year bond with a coupon of 1.85 per cent.

53 ESM 2015b, pages 43-44.

maturities (ten years), which – it must be stressed – are much shorter than the 30 years duration of the Greek loans.[54]

The concessional character of the euro-area financial support lowers considerably the average rate of interest that Greece pays on its public debt. This is now substantially lower than those paid by other countries also experiencing public finances difficulties. In 2014, the average interest rate on the Greek public debt was equal to 2.2 per cent, while Ireland and Italy paid an average rate of 3.6 per cent and Portugal an average of 3.9 per cent. Charts 2 and 3 show the marked drop in the average interest rate on Greek public debt and the reduction in interest payments that followed the 2011/2012 decisions.



However, interest payments on the public debt still represent a considerable burden on Greek public finances given the high level of debt relative to GDP (179 per cent at the end of 2014) even if this burden is slightly lower than that borne by other countries. In 2014, the amount paid by Greece in interest on its public debt was equal to 3.9 per cent of its GDP[55]. In the same year, Ireland paid a figure equal to 4.0 per cent of its GDP, Italy 4.7 per cent and Portugal 4.9 per cent. The figure for the weight of public debt interest payments as a percentage of GDP for the euro area was 2.6 per cent, while those for the countries with healthier public finances were even lower: Germany: 1.7 per cent; Denmark: 1.6; the Netherlands: 1.4; Finland: 1.3; Sweden: 0.7.

Reimbursement of the IMF and euro-area loans

The reimbursement of the principal, on the other hand, does not represent a significant economic policy problem in the short to medium term. Greece must reimburse around €19 billion to the IMF, €8.5 billion of which are due during the lifetime of the third economic adjustment programme (August 2015 to August 2018) and this is foreseen in the financing needs of the country to be covered with the ESM loan. The rest of the IMF reimbursement is distributed over time until 1 August 2030. The reimbursements *vis-à-vis* the euro-area will begin in 2020 and continue until 2059. At the end of September 2015, the weighted average residual maturity of the Greek public debt was 16.5 years, compared to values of between six and eight years for most European countries[56].

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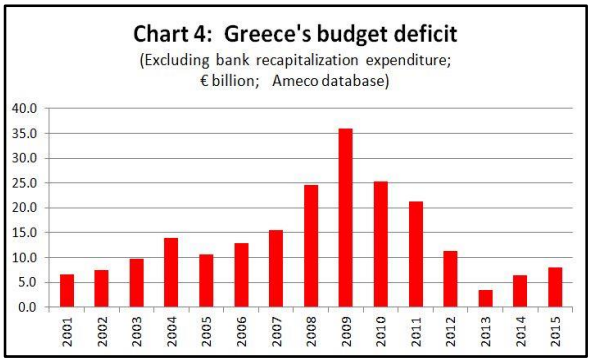
54 Darvas et al. make a comparison with the three months funding costs of the creditor countries and conclude that their funding costs are still lower than those of Greece. I am not sure that the comparison with the three-month funding costs is an appropriate one. Most countries are trying to exploit the current favourable market conditions to lengthen the average maturity of their debt and are therefore limiting very short-term borrowing as much as possible. The average maturity of the public debt of most European countries is at least six or seven years.

55 In 2009 this figure was 5.0 per cent.

56 Hellenic Republic Public Debt Bulletin n° 79.

2.4 The link between 'austerity' and official loans

It was made clear in the introduction that this paper would not deal with the macro-economic policies implemented in Greece since 2010. However, there is a link between these policies and the financial support that cannot be ignored. At the beginning of 2010 Greece had a gap between its fiscal receipts and its public expenditure equal to 15 percentage points of GDP. At the same time, the country was unable to borrow money on the capital markets and could only spend the resources obtained through its fiscal receipts; it would have been forced to immediately balance its budget. Without the intervention of the IMF and the euro-area countries, the budgetary adjustment path, the 'austerity' that the country would have had to endure, would have been much harsher.



For this reason, it was already foreseen in the first economic adjustment programme that the country should receive loans that would enable not only the reimbursement of the Greek Government bonds coming to maturity, but also the financing of budget deficits so as to enable a gradual elimination of these deficits. As has been shown in the previous pages, in the five years from 2010 to 2015 Greece incurred budget deficits totalling € 92billion and carried out financial operations that increased its debt (mostly to the benefit of its banks) by another €34 billion, thanks to the financial assistance of the IMF and the euro-area countries.[57]

Notwithstanding these loans, between 2009 and 2013, Greece experienced a very significant budgetary consolidation process that induced the strong recession we have witnessed. The recession was not only due to the dimensions of the budgetary consolidation process. It was certainly deepened by wrong policy choices, structural problems and the difficulty to address them[58], but the budgetary adjustment path was certainly one of the most important factors.

A better policy-mix would have produced better macroeconomic outcomes, but would have been unable to avoid a recession. To significantly limit the dimensions of the recession it would have been necessary, in addition to a better policy-mix, to implement an even more gradual reduction of the budget deficits. However, this would have necessitated larger loans. In June 2013, the IMF published a frank analysis of the implementation of the first economic adjustment programme. Its executive summary clearly states: "Rapid fiscal adjustment was unavoidable given that Greece had lost market access and official financing was as large as

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57 The figure for the amount of "*financial transactions*" impacting the gross debt levels originates from Eurostat, Reporting of Government Deficits and Debt Levels", Greece; http://ec.europa.eu/eurostat/documents/1015035/7039947/EL-2015-10.pdf

58 The IMF, in its ex-post analysis of the first economic adjustment programme identifies some errors that I also find very relevant: the lack of equity in the economic policy choices ("The burden of adjustment was not shared evenly across society"), the lack of "ownership" of the programme by the Greek Governments; the overestimation of the capacity to implement reforms and the fact that structural conditionality became too detailed (I have the impression that many departments of the European Commission saw the conditionality of the economic adjustment programme as a way of addressing the numerous breaches of EU legislation by Greece). IMF 2013a.

politically feasible".[59] To have less 'austerity', it would have been necessary to lend Greece much more. The IMF correctly states that "In any event, a deep recession was unavoidable".[60]

After all, the Stability and Growth Programme, presented to the European Commission by the Greek Government in January 2010 under the excessive deficit procedure, was based on a budget deficit reduction of four GDP percentage points in 2010 and three points for both 2011 and 2012[61]. The actual budget deficit for 2009 turned out to be higher than the estimate of January 2010 and the budgetary adjustment experienced by Greece (net of the expenditure for the recapitalisation of the banks) was 4.2 GDP percentage points in 2010, one point in 2011 and 4.4 points in 2012; a path very close to the one that formed the basis of the Greek Ministry of Finance's January projections (if anything, slightly less ambitious). The budgetary adjustment path agreed by the Greek Government in January 2010 under the excessive deficit procedure would have entailed a degree of 'austerity' practically identical to the one actually experienced.[62]

Question N° 7: ***What was the level of the Greek public debt at the outbreak of the crisis?***

The level of the Greek public debt (general government gross public debt) at the end of April 2010 can be estimated at around €311 billion. This represents 137 per cent of the Greek GDP in 2010. The current estimate is higher than those made at the time because of the usual statistical revisions and, above all, because of the move to a new system of national accounts (ESA2010) that has had a significant impact on the level of public debt.

Question N° 8: ***What is the level of the Greek public debt now?***

At the end of 2014, the national accounts indicated €317.1 billion. This figure is slightly higher than in May 2010 as both the increase in the national debt due to five years of budget deficit and the impact of the financial operations to support the Greek banking system have been almost entirely offset by the 2012 public debt cancellation. However, the very large reduction in the value of Greek GDP has led to an increase in the debt to GDP ratio from 137 per cent in May 2010 to 179 per cent by the end of 2014.

59 FMI 2013, page 3.

60 IMF2013a, pages 22 and 24.

61 The forecast was based on a deficit of 12.7 per cent of GDP in 2009, which would have had to be reduced to 8.7 per cent in 2010, to 5.7 per cent in 2011, to finally reach 2.8 per cent in 2012. (Greece 2010a, page 22).

62 In many analyses of the economic adjustment programmees for Greece, criticism has rightly been directed at the growth forecasts that turned out to be scandalously wrong. But in the Greek Ministry of Finance document of January 2010 the coherence between the size of the assumed budgetary adjustment and the GDP forecasts is even poorer. As already seen, the budgetary adjustment foreseen by the ministry was even more ambitious than the one effectively carried out. However, this had been deemed compatible with a recession of only 0.3 per cent in 2010 followed by a return to growth in 2011 and 2012 (1.5 and 1.9 per cent). The actual contraction of GDP was 5.4 per cent in 2010, 8.9 in 2011 and 6.6 per cent in 2012. It is true that in January 2010 the size of the 2009 recession was estimated at 1.2 per cent whereas, in reality, it was 4.4 per cent. Nevertheless, this explains only a small part of the huge forecasting error (Greece 2010a, page 13).

Question N° 9: ***What has been the effect of the IMF and euro-area support on the stock of Greek Government bonds?***

Out of a total of €320 billion of Greek Government bonds in circulation in May 2010, by the end of September 2015 €95.5 billion (around 30 per cent of the total) had been fully reimbursed. €167.6 billion (about 52 per cent) has been reimbursed very partially: the compensation that was actually paid was €41 billion, equal to around one quarter of their face value. Bonds worth €56.7 billion (just below 18 per cent) were still in circulation at the end of September 2015 (to this figure €3 billion of new five-year bonds issued in April 2014 must be added).

All in all, the intervention by the euro-area countries and the IMF has reduced the amount of Greek Government bonds in circulation by more than 80 per cent (end of September 2015). The reduction was equal to €263.1 billion and was obtained through the payment of €136.5 billion[63] (full reimbursements; €95.5 billion, plus partial compensation; €41.0 billion – a percentage of around 52 per cent of the nominal value of the bonds withdrawn).

Question N° 10: ***Who are the current creditors of the Greek Government?***

As of the end of September 2015, around 70 per cent of the Greek public debt consisted of loans from the euro-area and the IMF. Just under 18 per cent consisted of government bonds still on the market and the remaining 13 per cent consisted of other small short-term loans. However, slightly less than half of the bonds still in circulation were held by the ECB and some central banks of the euro-area. This means that almost 80 per cent of the Greek public debt at that date pertained to official creditors.

Question N° 11: ***How heavy is the interest burden on the public debt?***

In 2014, the average rate of interest paid by Greece on its public debt was 2.2 per cent (Ireland and Italy 3.6 per cent, Portugal 3.9 per cent).

In the same year, the sum paid as interest on the Greek public debt was equal to 3.9 per cent of the country's GDP (Ireland 4.0 per cent; Italy 4.7 per cent; Portugal 5.0 per cent).

[63] €95.5 billion of fully reimbursed bonds and €41 billion paid against the €167.6 billion worth of bonds withdrawn during the two restructuring operations.

3. Use of the financial support

This section looks at the use that has been made of the financial help extended to Greece by regrouping the expenditure made by the Greek state into main categories. The methodological problems encountered, the solutions identified and the statistical sources used are explained in greater detail in Annex 1.

Many people are under the impression that the goal of the euro-area and the IMF's intervention was almost exclusively to address the Greek public debt issue. The first subsection looks at this issue by splitting the expenditure in 'public debt' (reimbursement of bonds, loans and expenditure for its restructuring) and 'expenditure for the Greek economy' (recapitalisation of the Greek banks and other public expenditure) and estimates the relative shares of these two larger items. It comes to the conclusion that the two categories of expenditure are broadly of the same size (Table 7).

In addition, as was mentioned in the introduction, there are people who believe that most of the money lent to the Greek government was used to repay bonds held by the banks, and especially those held by the banks of the euro-area countries. To examine this issue, the second subsection attempts to identify the maximum share of the total financial help that may have gone to the private creditors, to the banks, to the foreign banks and, finally, to the banks of the euro-area (Table 8).

Given that the conclusions of these two subsections are contested by some, the last part of this section examines the reasons for this misperception and comments on the results of some alternative estimates.

3.1 Half for the debt, half for public expenditure

Table 6 gives an idea of how the loans from the euro-area countries and the IMF have been used. The first three lines relate to the interventions on Greek Government bonds: the first line concerns interventions on bonds held by private creditors; the second line concerns interventions on bonds held by official creditors (plus the reimbursements to the IMF and the reimbursement of the EFMS bridging loan); and the third relates to the cost of the interventions to restructure the Greek public debt in 2012. The fourth line shows the contribution to the recapitalisation of the Greek banks and the last line lumps together the financing of all other Greek state expenditure ("Budget deficits financing").

It is important to note what is explained at the bottom of the table: the figures do not indicate the amount of expenditure that has been or will be made for the reason indicated, but the share of this expenditure that can be estimated to have come from the IMF and European loans. For instance, it is foreseen that the expenditure that the Greek Government will have to undertake during the lifetime of the third programme for the recapitalisation of the banks will be

€25 billion.[64] However, a part of this expenditure will be financed through other means – in this case, through a part of the receipts of privatisations that are expected to bring in €6.2 billion over the course of the three-year programme – and it is possible to estimate that the share financed through the loans extended to Greece will be €23.2 billion (more detailed explanations are available in Annex 1).

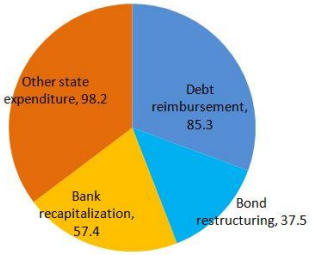
Table 6: Use of the EU and IMF loans	First programme	Second programme	Third programme
Reimbursement of bonds (private bondholders) [1]	41.1	2.9	3.5
Reimbursement of bonds (public bondholders)[1]		25.3	12.5
Cost of the restructuring operations[1]		37.5	
Recapitalisation of the Greek banks[1]		34.1	23.2
Financing of the budget deficits[1]	31.9	29.9	36.4
Total net[2] disbursements by the EU and the IMF	**73.0**	**129.8**	**75.6**

1) The sum of the financing needs during a programme that appears in the official documentation is systematically higher than the figure of the foreseen loans because of the presence of other complementary forms of financing (e.g. privatisation receipts, return of the profits on the bonds bought under the SMP operations, increases in the short-term financing "T-bills", etc.). The differences compared to the actual net disbursements are €30.0 billion for the first programme, €12.0 billion for the second and €5.7 billion for the third (see also Annex 1 at the end of the paper). These differences have been proportionally apportioned among the items in the table and deducted from the effective expenditure under each item. The data for the third programme is taken from the European Commission's analysis of July 2015 and from the "Financing needs" document under the third programme of August 2015.

2) Net of the reimbursements to the IMF (€13.1 billion and €10.4 billion).

During the second and third programmes the reimbursements of bonds held by private creditors have been and will continue to be very limited. Section 4 will explain how after the December 2012 buy-back, bonds with a nominal value of around €86 billion remained in circulation. Just under €50 billion of these bonds were held by the ECB and some other euro-area central banks[65]. The bonds held by private creditors at the end of 2012 were above all bonds issued in March 2012 and not handed in during the December buy-back. These are long-term bonds with maturities of between ten and thirty years, which therefore do not mature during the lifetimes of the second and third programmes. The same applies to the €3 billion of five-year bonds issued in April 2014. The only reimbursements of bonds held by private creditors concern the bonds not handed in during the March 2012 operation ('holdouts'). By August 2018 these bonds, which had reached a volume of €6.5 billion by the end of 2012, should have been almost entirely reimbursed. The reimbursements on the IMF

Chart 5 : use of the € 278.4 billion that will have been lent to Greece under the three programmes (data from Table 6)



64 Well after the decision to extend the loan under the third programme was taken, the Asset Quality Review conducted by the bank supervisory arm of the ECB came to the conclusion that the recapitalisation needs of the Greek banks could be around €15 billion. If this was the case, the difference would probably be deducted from the overall volume of disbursements.

65 During the negotiations for the third programme, the media often referred to the forthcoming maturity of "Greek debts" with the ECB. In reality, it was the maturity of Greek Government bonds bought by the ECB during the SMP operations, launched to lower the interest rates on the government bonds of some countries (the official justification of the operation is more complex and relates to the effectiveness of monetary policy).

loans started at the end of 2013 and are included in the line of the interventions on bonds held by official creditors.

Tables 6 and 7 and Chart 5 show that of the €278.4 billion that will have been lent to Greece during the three economic adjustment programmes (net of the reimbursements to the IMF for €23.5 billion), €122.8 billion will have been used for interventions on the Greek public debt, just over 44 per cent of the total amount lent. This is the money that will have been used to reimburse Greek government bonds coming to maturity (some held by private bondholders and some by central banks) and the money that has been paid in compensation for the withdrawal of €198.1 billion of Greek government bonds.[66]

Table 7: Use of the EU and IMF loans

(€ billion)	First two programmes		Three programmes	
Net loan disbursements	202.8	100.0 %	278.4	100.0 %
Public debt-related expenditure	106.8	52.7 %	122.8	44.1 %
Other Greek state expenditure	96.0	47.3 %	155.6	55.9 %

The other €155.6 billion (56 per cent of the total) will have been used for interventions in favour of the Greek economy, without, however, being able to prevent the very deep recession that the country has experienced. This is the money that has been used or earmarked to recapitalise the Greek banks in 2012/2013 and again at the end of 2015, in addition to the money that has been and will be used to finance Greek public expenditure.

Some people have difficulties in accepting that the money spent to recapitalise the banks is money spent in the interest of the Greek economy (see end of section 3.3 for a discussion of this point). However, there may only be a small doubt as to whether the part of the recapitalisation that was directly provoked by the 2012 cut in the Greek public debt should be considered as an item of expenditure linked to the need to deal with the Greek public debt or as the financing of Greek public expenditure[67]. This doubt does not seem justified considering that the alternative would have been to fully reimburse the bonds held by the Greek banks, which would have cost much more. In any case, reallocating this item of expenditure to the solution of the 'debt problem' brings this kind of expenditure to around 49 per cent of the total help extended.

Making a large allowance for any uncertainty in the figures and for the objections about the proper allocation of the money spent on the recapitalisation of the banks directly related to the cut in the Greek public debt, the conclusion remains that broadly half the financial help will have gone to dealing with the Greek public debt and the other half will have gone to financing Greek public expenditure.

66 In addition the bondholders also received €30.5 billion worth of new Greek long-term bonds (combined figure for the two 2012 operations).

67 See section 3.4 for the elements that enable this amount to be estimated at around €17 billion.

The intervention of the euro-area member states and the IMF has certainly transformed the Greek public debt into debt towards official creditors (around 80 per cent of the total by the end of September 2015), but this result will be obtained with slightly less than half of all the disbursements and it will not be the only effect of the intervention, as some believe. More than half of the disbursements will have financed Greek public expenditure, consisting of new financing that could not have been obtained on the market and will have been obtained from the euro-area countries and the IMF.

If this analysis is conducted simply on the basis of the first two financing programmes, the results shown are different, but not in a substantial way. Of the €202.8 billion lent to Greece under the first two programmes (see Table 7), slightly less than 53 per cent (€106.8 billion) was effectively used to reimburse bonds coming to maturity or pay the compensation for the 2012 restructuring of the Greek public debt. The other 47 per cent has been used to finance Greek state expenditure.

3.2 How much money went to the banks?

Let's turn our attention now to the complaint that "the money has gone to the banks". Before even looking at the data, it is important to remark that the complaint concerning the destination of the funds makes little sense from a logical point of view. When confronted with the need to help somebody in debt there are only two possibilities: a) one gives the person the money to repay the debts or b) one accepts both that the person is unable to repay the debts and the consequences that this might entail. If one chooses the first option, the money will inevitably go to the creditors, whoever they are.

Once it is decided that a default has to be avoided, it makes little sense to ask oneself who are the beneficiaries of the repayments for a number of other reasons. For a number of years, the Greek state has spent more than it was receiving through fiscal receipts. It has bridged the gap through the issuing of bonds on the capital markets and has continuously issued new bonds to reimburse those coming to maturity. In May 2010 it found itself in a situation where, in order to sell its bonds, it had to offer coupons that it could not afford to pay.[68]

The money that was lent by the investors to the Greek state was used to finance the expenditure that the government and the parliament had authorised: salaries in the public sector; pensions; purchases of goods and services; military expenditure and all the other types of expenditure usually made by a modern state. The investors transferred money to the Greek state in exchange for its government bonds. By the time they reach their maturity, these bonds may still be in the hands of the initial investor or may have been exchanged many times on the secondary market. What difference does it make if at maturity, the bonds are held by an individual investor, a pension fund, by a Greek bank or by a foreign bank?

The laws that govern the issuance of government bonds almost always establish the impossibility to discriminate at maturity between different types of bondholders. If these

[68] Some commentators maintain that the situation was probably even worse, i.e. that there would have been no interest rate at which the investors would have bought Greece's bonds. The Greek Government would have been in what the jargon calls "a full rationing position".

provisions did not exist, there would be distortions on the market with the bonds approaching maturity ending up in the hands – probably at a discount – of holders authorised to be reimbursed. Furthermore, the possibility of discrimination in the reimbursements would probably discourage the initial acquisition of the bonds leading to the need to offer higher interest rates.

Money to the banks: the data

The debate on where the money went was not limited to Greece. It was particularly heated in Italy, where the position that the "money had mostly gone to the banks" was even taken up by a former Prime Minister during a TV interview[69]. Many commentators have written about the issue. In July 2015, in Lavoce.info there was an exchange of views between Nicola Borri and Pietro Reichlin, on the one hand, and Luigi Zingales, on the other.[70] Their contributions have shown how difficult it is to identify the beneficiaries of the various operations and to come up with precise figures. However, it is possible to fix limits within which the 'true' figures must be found. This requires some relatively simple calculations, which are presented in Table 8 and in Annex 1.

This table has not been drawn up using the methodology employed to prepare Table 6, which identified the contribution of the loans to various items of expenditure taking into account that Greece also had access to other complementary forms of financing. Table 8 is based on the amounts effectively spent and thus avoids any risk of distortions in the results, provoked by the use of proportionally reduced figures, as is the case in Table 6. Implicitly it assumes that the 'other' sources of financing (privatisation receipts, short-term bonds, 'Repos', profits on the SMP operations, etc.) will have co-financed other expenditure of the Greek state, but not the interventions on the Greek Government bonds. This leads to an overestimation of the money that may have gone to the banks, but even under this assumption the results show that the idea that "most of the money has gone to the banks" is off the mark.[71]

The first line shows the interventions on Greek Government bonds held by ***all creditors,*** including the compensation paid for the 2012 public debt restructuring (it does not include the IMF reimbursements). This line also shows that all these interventions represent 52.8 per cent of all the financial support received by Greece.[72] The largest part of this amount will

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69 Massimo D'Alema in a TV interview with Rai News on 5 June 2015.

70 The three papers are indicated in the "References" as Borri et al 2015a and 2015b, on the one hand, and Zingales 2015, on the other. See also Galli 2015a and Galli 2015b.

71 For instance, the starting point of the calculation (the money used to reimburse all bonds plus the cost of the two restructuring operations) in this table is €147.0 billion, whereas in Table 6 it was €122.8 billion. As indicated, the approach followed in Table 6 is more correct, but it introduces a transformation of the figures which I prefer to avoid in this more controversial part of the discussion. The approach followed here leads to higher percentages for the "maximum ceilings".

72 The total corresponds to the sum of the €58 billion of interventions on bonds held by private creditors under the first programme, €3.2 billion under the second and €3.8 billion under the third. To these figures have been added the €27.6 billion of interventions on bonds held by official creditors under the second programme and the €13.4 billion of the third. Finally there is the cost of the two restructuring operations of 2012: €41.0 billion. It is important to note that the assumption that the €58 billion of bonds that were reimbursed between May 2010 and the beginning of March 2012 were held by private creditors is not correct. Probably, between one fifth and one sixth of all the Greek Government bonds in circulation during this period were held by the ECB (which at the end of 2010 already held €73.5 billion of bonds bought under the SMP programme – ECB 2010 Report, page 100 – with Greek bonds constituting the largest part according to most observers). But in the absence of

have been used to fully reimburse bonds coming to maturity, but a substantial part of the resources has gone to the holders of the bonds that have been restructured against a relatively small amount of compensation in 2012: about 25 per cent of the nominal value of the bonds handed in.[73] It is a moot point whether these resources should be considered in the same way as those that went to fully reimbursing bonds coming to maturity. The table presents the figures with and without the compensation for the restructuring.

The second line shows the percentage of the resources used to the benefit of private creditors (i.e. non ECB, other euro-area central banks or IMF). It must be remembered that even though the ECB and the other euro-area central banks, which in March 2012 held €56 billion of Greek Government bonds, were excluded from the restructuring operations, these organisations have accepted to return the profits made with these purchases to the Greek authorities. The exclusion of the public creditors brings the total that will have been used for interventions on Greek Government bonds held by ***private creditors*** to 38.1 per cent of the total amount lent to Greece.

The banks were certainly the largest group of bondholders, but there were also other groups, such as insurance companies, pension funds, enterprises and individual investors[74]. In 2013, a group of around 200 Italian nationals asked the EU Court of Justice to make good damages amounting to €12 billion suffered by them due to the restructuring. This shows that among the private bondholders there were a significant number of enterprises and private individuals[75]. At the end of 2009, Greek banks held about 60 per cent of all the securities held by Greek residents[76]. By way of comparison, the percentages in other countries are similar or lower. On the other hand, for those criticising the fact that "the money has gone to the banks", it will probably not make much difference whether the money has gone to an insurance company or a bank.

In the absence of reliable estimates and taking into account the fact that some people view the banks and other financial institutions as being one and the same thing, the assumption used here is that the banks – both Greek and foreign – may have received 90 per cent of all the money that went to private bondholders. This reduces the maximum figure of the loans that will have gone to ***banks*** to € 95.4 billion, equal to 34.3 per cent of all the loans (21 per cent if the money for the restructuring operations is excluded).

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precise estimates, I take this assumption which, again, may lead to an oversestimation of the 'ceilings' for the amounts that may have gone to the banks, the foreign banks or euro-area banks.

73 The two restructuring operations led to the withdrawal of €198.1 billion of Greek Government bonds. In exchange new Greek Government bonds worth €30.5 billion were issued; the other €167.6 billion worth of bonds withdrawn against the payment of €41.0 billion (in fact, EFSF bonds with maturities from six months to two years).

74 The Preliminary Report of the Truth Committee on the Greek public debt (Truth Committee, 2015a) on page 20, in a box on the Greek public debt restructuring of March 2012, complains about the loss of €14.5 billion, suffered by Greek pension funds and the fact that 15,000 Greek families have lost their life savings. As explained in section 1.3, the national accounts of Greece show that of the €126.6 billion of Greek Government bonds cancelled in 2012, €12.2 billion were indeed held by other parts of 'general government' (mainly social security organisations). These are indications that the true share of Greek Government bonds held by the banks must have been well below the 90 per cent conservatively assumed in the calculations behind Table 7.

75 Case T-79/13, "Alessandro Accorinti and others v ECB", see press release 119/15 of 7 October 2015. The General Court rejected the plaint stating that: "The loss suffered in 2012 by the private holders of Greek debt instruments in connection with the restructuring of the public debt of the Greek State is not attributable to the ECB, but to the economic risks ordinarily inherent in financial sector activities".

76 Financial Accounts of the Bank of Greece, "Liabilities of the General Government".

Table 8: Estimates of the maximum percentage of the assistance received by Greece that may have gone to the euro-area banks	
52.8 %	Percentage of the net financial support disbursed during the three programmes (€278.4 billion) that will have been used ***for interventions on the debt*** (€147.0 billion). This percentage becomes 38.1 per cent if the funds for the debt restructuring operations are excluded.
38.1 %	Maximum percentage of the support of the three programmes that may go to interventions on the debt held by ***private creditors*** (€106.0 billion). 23.3 per cent if the funds for the debt restructuring operations are excluded.
34.3 %	Maximum percentage of financial support under the three programmes that may go to ***banks***, including Greek banks, assuming that these may have held ninety per cent of the Greek Government bonds (€95.4 billion). 21 per cent if the funds for the debt restructuring operations are excluded.
22.3 %	Maximum percentage of financial support that may go to ***foreign*** *(i.e. non Greek)* ***banks*** (€62 billion). 13.7 per cent if the debt restructuring operations are excluded.
16.7 %	Maximum percentage of financial support under the three programmes that may go to ***euro-area banks*** (€46.5 billion). 10.2 per cent if the debt restructuring operations are excluded.
Same calculations limited to the operations under the first two programmes	
64.0 %	Percentage of financial support disbursed during the first two programmes (€202.8 billion) that has been used for ***interventions on the debt*** (€129.8 billion). This percentage decreases to around 44 per cent if the debt restructuring operations are excluded.
50.4 %	Maximum percentage for interventions on bonds held by ***private creditors*** (€102.2 billion). 30.2 per cent without the restructuring operations.
45.4 %	Maximum percentage of support that may have gone to ***banks***, including Greek banks, even under the assumption that these may have held ninety per cent of all Greek Government bonds (€92.0 billion). 27.2 per cent without the restructuring operations.
29.5 %	Maximum percentage of support that may have gone to ***foreign banks*** (€59.8 billion). 17.7 per cent without the restructuring operations.
22.1 %	Maximum percentage of support that may have gone to ***euro-area banks*** (€44.8 billion). 13.2 per cent without the restructuring operations.

Greek banks held the largest share of Greek Government bonds, but substantial amounts were also held by French, German, Italian banks and by non euro-area banks. The Bank of Greece data show that by the end of 2009 the share of long-term Greek Government bonds held by non residents was equal to 70 per cent of the total[77]. After the outbreak of the crisis, foreign private creditors reduced their exposure to Greece and other estimates put their share of Greek marketable debt instruments in 2012 at between 50 and 60 per cent of the creditors' total.[78] It therefore appears consistent with the goal of estimating a ceiling for the money that may have gone to foreign banks to introduce the assumption that the share of Greek Government bonds held by non-residents could have been around 65 per cent in the period between May 2010 and February 2012 when most of the reimbursements were made (€58 billion). This leads to

77 Financial Accounts of the Bank of Greece, "*Liabilities of the General Government*".

78 Merler - Pisani 2012a.

a maximum amount of €62 billion that may have gone to ***foreign banks***, equal to 22.3 per cent of the total amount lent to Greece by the IMF and the euro-area countries.

I do not have reliable estimates for the share of Greek Government bonds held by the euro-area banks. On 15 April 2010, The Economist published a table based on data from the Bank for International Settlements (that does not distinguish between exposure *vis-à-vis* the Greek state and exposure *vis-à-vis* Greek private bodies) showing that at that time, the euro-area banks may have held 58 per cent of the bonds held by foreign banks[79]. But Zettelmeyer *et al.* indicate, in a very indirect way, a higher share. They reported the exposure to the Greek state of 24 of the 32 banks (essentially the largest ones) that formed the committee of creditors involved in negotiating the March 2012 operation with the Greek Government.[80]

Out of a total of €65 billion exposure for the 24 banks, Greek banks had an exposure of €29.1 billion and the euro-area banks €34 billion (the French banks had a total exposure of €17.0 billion, the German banks €5.8 billion, while the Belgian and Italian banks had €4.7 billion each). To be on the safe side, the assumption adopted here is very close to the indirect indications of Zettelmeyer *et al*.; specifically that the euro-area banks may have held 75 per cent of the bonds held by foreign banks. This brings the maximum amount that may go to euro-area banks to around €46.5 billion, equal to 16.7 per cent of the total financial support extended to Greece.

It is possible to compare these results with the estimates of the euro-area banks' total exposure to the Greek state coming from other sources. The calculations just presented suggest that out of the €58 billion of Greek Government bonds that were fully reimbursed between May 2010 and March 2012 the maximum amount that the euro-area banks may have received is €25.4 billion. They also indicate that the maximum amount that they may have received with the restructuring operations is €18 billion. This last figure implies that the euro-area banks may have handed in bonds for €72 billion. Therefore the calculations presented in Table 8 suggest that the euro-area banks may have held as much as €97 billion of Greek Government bonds at the outbreak of the crisis.

The aforementioned article by The Economist indicates that the "true" figure for the exposure of the euro-area banks was probably around €70 billion. Borri and Reichlin do not indicate a figure for the total exposure of the euro-area banks, but put forward estimates of €25 billion for the French banks and €16 billion for the German banks, which again appear coherent with the figures of The Economist. These two elements provide a confirmation of the plausibility of the percentages and absolute figures presented in Table 8 and of their being 'maximum amounts'.[81]

If the calculations are conducted only on the basis of the first two programmes, those known when Alexis Tsipras spoke in the European Parliament, the percentages are slightly higher,

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79 The Economist, 2010a.

80 Zettelmeyer *et al.*, table 2, page 9.

81 It is important to bear in mind the three assumptions used in the calculations that may have led to ceilings being higher than their true value: a) the use of the actual figures for the interventions instead of the part that may come from the financial assistance (as in Table 6); b) the assumption that all the €58 billion of bonds reimbursed under the first programme were held by the private sector (some were certainly held by the ECB); c) the assumption that the banks may have represented 90 per cent of the bondholders, other than the ECB and the euro-area central banks.

but the conclusion is still that the euro-area banks may, at maximum, have received around 22 per cent of the financial support under the two programmes. The data shows that the statement by Alexis Tsipras (and many others) constitutes a big exaggeration if it is referring to the euro-area or foreign banks and still constitutes an exaggeration even if it is referring to all the banks, including the Greek ones.

The fact that the French, German, Italian and Belgian banks may not have been large beneficiaries of European assistance to the extent that many believe does not mean that these banks will not have done their best to reinforce all the concerns about the consequences of a Greek default that the European governments might have had and that the decision eventually taken may not have been influenced by their lobbying. A judgement on the other statement by Alexis Tsipras – that very little money reached the Greek people – cannot come from considerations of the type just presented, but from a detailed analysis and from value judgements on the economic policy measures effectively implemented.

In addition, the financial system is highly integrated. The near paralysis that followed the Lehman Bros bankruptcy was due to the difficulties the banks had in continuing to lend to each other in the absence of precise information about the financial position of each counterpart. So the primary concern of the euro-area governments was to avoid a systemic crisis, much more than "saving" the banks of this or that country. The lobbying carried out by the banking sector in favour of avoiding a Greek default must have been motivated primarily by this same goal.

3.3 Why are the above conclusions surprising and controversial?

Within political debates in many countries, the idea that the IMF and euro-area countries interventions consisted essentially out of the repayment of the Greek public debt is very widespread. There are also many people who believe that most of the money has indeed gone to foreign banks or to euro-area banks[82]. Those who hold these views will be surprised by the conclusions of the two previous subsections.

There are some reasons that can be put forward for this incorrect perception. The most important one is that the initial decisions, the first adjustment programme, foresaw the reimbursement of the Greek public debt to avoid a default and that many people have the impression that this is what happened all along. The change of course in respect to the Greek public debt has not made the same impression on public opinion (and also the change in the financial conditions attached to the loans has not been appreciated by non-expert observers). The initial impression of the nature of the intervention has remained unchanged.

[82] Among those taking this position one can also find some famous names. One is Joseph Stiglitz who in a piece for Project Syndicate of 29 June 2015 called 'Europe's Attack on Greek Democracy' writes: "We should be clear: almost none of the huge amount of money loaned to Greece has actually gone there. It has gone to pay out private-sector creditors – including German and French banks. Greece has gotten but a pittance, but it has paid a high price to preserve these countries' banking systems." Unfortunately, he does not indicate the source for this statement nor the calculations that lead him to this conclusion. http://www.project-syndicate.org/commentary/greece-referendum-troika-eurozone-by-joseph-e--stiglitz-2015-06#pMoV63xxICkWpXGU.99

When the first adjustment programme was replaced by the second one, only €73 billion of the agreed €110 billion had been disbursed and the largest part of this amount (€44 billion) had indeed been used to fully reimburse bonds coming to maturity (see Table 6). However, in the course of 2011 it was decided to move towards 'Private Sector Involvement' and this led to the very harsh restructuring of the Greek Government bonds still in circulation. Table 6 shows that after 2012 there will be very few bonds coming to maturity and needing to be reimbursed. At the end of 2012, the amount of Greek Government bonds still on the market (i.e. excluding those held by central banks), as explained earlier, was very limited: around €40 billion. The restructuring of the Greek public debt – which will be presented in section four – seems not to have been noticed by public opinion to the same extent as the initial decision to help Greece honour its obligations and avoid a default.

At the same time, it often not appreciated that thanks to the conditions under which the restructuring took place, the IMF and euro-area intervention on the debt was very cost-effective. As has already been explained, by September 2015 this intervention had resulted in a reduction in the volume of Greek Government bonds in circulation equal to €263.1 billion and this reduction had been obtained through the payment of €136.5 billion.[83] This left space for interventions to finance Greek public expenditure (even if I personally believe that in May 2010 it would have been more appropriate to agree on a substantially higher volume of loans – perhaps in excess of €150 billion – so as to allow a more gradual reduction path for the budget deficit).

In addition, there have been some papers and reports produced by 'militant' organisations, which have indicated that the amount that appears to have gone to the Greek economy is much lower than the figure just presented; in some cases it is stated that only ten per cent of the total volume of loans went to the Greek economy.

The recapitalisation of the banks

An additional source of confusion arises from the treatment of the expenditure for the recapitalisation of the Greek banks. The money used for these operations – which should become progressively less necessary thanks to various measures that are being taken at the European level – is seen by some as a gift to the banks. These interventions are instead crucial for the functioning of an economy. Furthermore, the recapitalisation needs of banks do not only depend on the cuts in the value of government bonds that they have in their portfolios, but also on the quality of all their assets, which during a strong recession are bound to deteriorate significantly. Additionally, it should not be forgotten that the recapitalisation measures are usually carried out in a very painful way for the banks concerned. In many cases, these measures lead to a *de facto* nationalisation of the banks. In most cases, they impose limits on the banks capacity to distribute dividends and on the remuneration of management (the latter is a measure that many would like to see as a permanent feature of bank regulation).

[83] €95.5 billion for the full reimbursement of some bonds and €41 billion paid as compensation during the two 2012 debt restructuring operations.

It was already necessary to recapitalise the Greek banks in 2009, well before the outbreak of the Greek public debt crisis. It is also certain that in 2012, the third year of an exceptionally big recession, a recapitalisation might have been needed in any case. At the beginning of 2011 the Greek Government commissioned an analysis, conducted by BlackRock Solutions[84], on the recapitalisation needs of the Greek banks. The European Commission, in its Third Review of February 2011, had also clearly indicated the need for strong intervention to ensure the stability of the financial sector at a time when the debt restructuring was not yet officially on the table.[85] Section 4.4 explains how the report produced by BlackRock Solutions for the Bank of Greece enables one to estimate the direct impact on the Greek banking system of the two debt restructuring operations of 2012 to be approximately €17 billion.

In Annex 2, more detailed comments are offered on the estimates produced by four authors/organisations: ATTAC Austria, which published a piece on their website in June 2013[86]; Yanis Mouzakis, who published an article in Macropolis in January 2015[87]; the report of the 'Truth Committee' set up by the Greek Parliament and published in June 2015[88]; and a paper[89] by an Argentinean researcher, Pablo G. Bortz, published in November 2015[90]. These are the analyses that I could identify, but there must surely be many more.[91]

84 Bank of Greece, 2012a.

85 European Commission, 2011a, page 3.

86 Attac Austria, 2013.

87 Mouzakis, 2015.

88 Truth Committee, 2015.

89 Bortz, 2015.

90 I am not aware of other detailed studies that have attempted to identify the uses of the financial support to Greece, but Galli 2015a, without offering precise figures, comes to similar conclusions.

91 Another commentator that reaches the same conclusions is Andrea Zhok (Zhok 2015). In his paper he writes that only €27 billion (12 per cent) of the disbursements pertaining to the first two programmes have gone to support the Greek economy. He makes this statement in section 4 of his paper, but does not indicate the source of this figure. In his introduction he writes that he has preferred not to use footnotes or indicate his references in order to improve the readability of his text, but that all his figures come from "official documents". Unfortunately, the available official documents do not contain figures of this type. The 'financing needs' tables are usually very detailed and to arrive at the categories we are discussing here it is necessary to rearrange and regroup the figures (see Annex 1).

4. The cuts in the Greek public debt

The decision taken in May 2010 to help Greece repay its government bonds until it would be able to return to the capital markets under normal conditions was not an easy one. At the end of 2010, the possibility of restructuring (euphemism for cutting) the Greek public debt started appearing in the official discussions. This was subsequently completed in 2012 and produced a substantial reduction in the level of the Greek public debt, even if the process leading to the eventual restructuring was complex and less than ideal.[92]

This section will look at the reasons why it was initially decided to avoid a Greek default and those that led to a change of course. It will then present the three interventions on the Greek public debt that have taken place thus far:

- the bond exchange of March 2012;
- the voluntary 'buy-back' of December 2012;
- the cuts in the debt owed to the euro-area countries that were decided in the same year.

4.1 The decision to avoid a default in 2010

As previously discussed in section 2.1, the decision taken in 2010 to avoid a Greek default had various reasons. There was certainly the desire to spare the country the financial turmoil that a default entails, but the major concern was that a Greek default might have seriously hit a number of large banks and triggered a systemic crisis of the financial system; it was feared that a Greek default might constitute for the European financial system an event comparable to what the bankruptcy of Lehman Brothers in September 2008 meant for the financial system of the industrialised world at that moment.

That this concern was a serious one is also indicated by the fact that the IMF decided to grant what was– by the standards of that organisation – an exceptionally large[93] loan to Greece, notwithstanding the uncertainties concerning the sustainability of its debt on the basis of a 'systemic exemption', i.e. taking into account that the default of the country would carry a high risk of international spillovers[94]. Two years later, this concern was still present. In 2012, when the ESM was negotiated, it was agreed that one criterion to be taken into consideration in assessing an application for support would be "the risk of financial stability for the euro area as a whole"[95]. In any case, setting up a multi-year adjustment programme with a large financial assistance component was obviously designed not only to address the specific Greek problem but also to send a signal to the markets that the member states of the European monetary union

92 Giampaolo Galli (Galli 2015a and Galli 2015b) stresses the irony that the idea of a cut in the Greek public debt and therefore a 'punishment' of the banks was initially supported in particular by the "rigorous Germans", something that was later taken up by Syriza and its supporters when this implied punishing the taxpayers.

93 The IMF rules foresee that a country may borrow up to 200 or 600 per cent of its 'quota'. In the past there have been cases when this threshold has been breached. In the nineties, Korea received a loan equal to just below 2,000 per cent of its quota and Turkey received a loan equal to 1,500 per cent of its quota. The Greek SBA loan of 2010 was equal to 3,212 per cent of its country quota.

94 The modification of the IMF rules to insert this 'systemic exception' was decided in the context of the Board meeting granting the loan to Greece (IMF, 2013a, page 9).

95 Art. 13.1, Treaty Establishing the European Stability Mechanism.

were able to deal with any difficulty that might arise among their ranks. The almost simultaneous setting up of the EFSF certainly also had this goal.

From the beginning of the crisis the ECB had underlined the many negative effects a restructuring (default or 'selective default') of the debt of a euro-area country could entail[96]. The main argument put forward by the ECB was that a country default could create the expectation of other defaults ('contagion'). Furthermore, the ECB reminded everyone that a part of the public debt reduction would be offset by the need to recapitalise the banks of the country concerned, which in turn would, very likely, be unable to cope on their own with the consequences of the cut in the value of the restructured government securities (experience has shown that in the case of Greece this aspect has indeed been very significant). However, the ECB was also very critical of the position that a debt restructuring should be a pre-condition for any help. For the ECB this would have encouraged investors to be less patient with countries in difficulties, thereby encouraging them to reduce their holdings of government debt at the first sign of difficulties, well before any possible official restructuring. This in turn would have led to a crisis that would have been more difficult to manage and to the possibility of a self-fulfilling crisis. Finally, the ECB considered that it would not have been able to accept the bonds of a state in default as collateral for its lending operations, and that this would have limited its possibility to support the Greek financial system.

Beyond the specific arguments put forward by the ECB, the problem remained that any restructuring of the Greek public debt represented a major disruption with regard to the confidence placed in commercial contracts and practices, in addition to inflicting severe hardship on private individuals, enterprises, pension funds and other social institutions[97]. A public debt restructuring would inflict hardship on risk adverse investors who had bought state bonds as the least risky form of investment.

In its ex-post analysis of the implementation of the first economic adjustment programme, the IMF briefly discusses the opportunity of a Greek public debt restructuring in 2010[98]. The text clearly indicates that this would have been the preference of the IMF, arguing that this had been done before in a number of cases similar to the Greek one. However, the IMF goes on to report that the Greek Government and those of the other euro-area countries all ruled out this possibility[99]. It is amusing to note that the text contains, on page 28, a footnote with a long list of well-known economists who in the Spring of 2010 had adopted a position in

96 The position of the ECB on the desirability of a restructuring of the Greek public debt has been presented many times by its former president, Jean Claude Trichet, but also, and very forcefully, by Lorenzo Bini-Smaghi, member of the Board, who delivered various speeches on the subject. See for instance "Bini Smaghi 2011a", but also Galli 2015a.

97 The Preliminary Report of the Truth Committee on the Greek public debt (Truth Committee, 2015a) on page 20, in a box on the Greek public debt restructuring of March 2012, complains about the loss of €14.5 billion suffered by Greek pension funds and the fact that 15,000 Greek families have lost their life savings.

98 IMF 2013a, section H, pages 26-28.

99 The minutes of the IMF Board meeting where the decision to grant the 2010 loan to Greece was taken (IMF 2010a) indicate that the representatives of many countries (Argentina, Brazil, Russia, India, Switzerland) had regretted the fact that no restructuring of the Greek public debt had been foreseen. The minutes indicate that the staff of the IMF pointed out that a restructuring of the Greek public debt had been "ruled out by the Greek authorities themselves". The staff also pointed out that around 90 per cent of the Greek bonds were issued under legislation that did not include the 'Collective Action Clauses' that would have allowed a restructuring operation.

favour of an immediate restructuring (at the same time many other well-known economists had instead argued for the avoidance of a default).

I believe that the decision taken in May 2010 not to restructure the Greek public debt was correct. A restructuring of the Greek public debt in 2010 would have had a number of advantages, although it is not sure that it would have led to a bigger cut in the Greek public debt (this is the conclusion of the analysis presented in section 4.7). However, in 2010 the uncertainties surrounding the consequences of a restructuring were so big that the 'safe' course that was chosen was probably the correct one.

Many were convinced that the Greek public debt was unsustainable and therefore a restructuring was necessary. However, at the time nobody could rule out this spilling over to other countries with fragile public finances, thereby triggering a systemic crisis in the European financial sector. The probability of one of these two things actually taking place was not very high, but the consequences of even one of them would have been so serious that everybody preferred to take the safe route of avoiding the default. Among the advisors of the various ministers and prime ministers many must have considered that a restructuring would have been desirable, but very few must have felt able to reassure their political masters that none of the two feared risks would materialise.

In 2010, the European banking sector was in the process of receiving a huge amount of help from national governments. As previously noted, this strengthening helped to reach the decision to cut the debt in 2012. It is conceivable that in the hypothetical case of additional difficulties created by a restructuring of the Greek public debt in 2010, the national governments could have stepped up their efforts, especially through guarantees, and avoided the systemic crisis. However, the other factor, namely the spill-over to the debt of other, bigger countries, was more threatening. From the moment the discussions on a private sector involvement became more concrete, in mid-2011, the interest rates on the Spanish and, above all, the Italian government bonds started rising sharply. Towards the end of the summer, the interest rates on the Italian bonds were slightly higher than the levels seen on Greek, Portuguese and Irish bonds when these countries had to request external help. Italy managed to weather the storm thanks to the good management of its public debt, which had led to a lengthening of its maturities and to the constitution of a significant cash reserve that enabled the Italian Treasury not to issue bonds when the market situation became very tense. Successively, there was a different prime minister and the formation of a national unity government of sorts that took very harsh budgetary measures and thereby managed to restore market confidence.

This development should be seen as a 'near miss'. It is difficult to rule out that a restructuring of the Greek public debt in 2010 would not have spread the crisis beyond Greece, Ireland and Portugal. A crisis in Italy or Spain could have been beyond the capacity of the euro-area governments to intervene. This remains the main justification for the decision taken in 2010 and, in my eyes, a sufficient one.

4.2 Towards the Public Sector Involvement (PSI)

Very soon after the May 2010 decision to avoid a default, doubts arose concerning the likelihood of achieving this goal. The reticence initially shown towards accepting a default was reduced by the gradual strengthening of the European banks, which was substantially helped by the huge loans and guarantees that they received from national governments. The loans and guarantees extended to the banks by the European governments far exceeded the assistance extended to the euro-area member states in difficulties: after the 2008/2009 crisis, the European Union banks received €671 billion in capital and repayable loans and €1,288 billion in guarantees.[100]

However, the reduction in the risk of a systemic crisis due to the strengthening of the banking system was not the only element making the default choice appear less risky. It could be argued that the delay in carrying out the operation could increase the possibility of the operation being seen as a really exceptional one. Obviously all the official statements during this period underline the unique character of the Greek restructuring, with all other members of the euro-area stressing their determination to honour their sovereign signature, but these are statements that have to be made on such occasions and usually do not impress the markets much (see the end of this subsection). However, the length and complexity of the process leading to the March 2012 restructuring may have indeed helped in it being seen as something that would not be soon repeated.

The pressure for a change of course came essentially from Germany, where the debate on the cost of the help extended to Greece for the taxpayers had a much stronger public dimension than in other countries. The support for the line initially taken (and at the time supported by all countries, including Germany) came above all from both France[101], the country with the largest private exposure *vis-à-vis* Greece, and the European Central Bank.

In official language, the restructuring of the Greek Government debt still on the market was called 'Private Sector Involvement' (PSI). European policy makers had to find a common line on how to deal with not just a very difficult issue[102], but one for which there existed no precedent in their direct experience. It was therefore to be expected that the issue would be discussed many times and that it would take a lot of time to arrive at a common position. However, for the financial markets the situation was very unsettling. For obvious reasons any news on the matter was interpreted in the most negative way and the 'contagion' (through the increase in the interest rates on public debt) began to appear just when everybody was claiming to be doing their utmost to avoid it.

The matter of a possible involvement of the private sector was initially discussed at the highest level during the famous walk of Angela Merkel and Nicolas Sarkozy on the beach of Deauville in October 2010. In the press conference that followed, the two leaders expressed the view that it would be desirable to have European rules governing how to help countries

[100] Adamczyk et al. 2015.

[101] The position of the two countries on the "involvement" of private creditors has been discussed by many media. See, for instance, Reuters 2010a and Bloomberg 2011a, but also Galli 2015a and Galli 2015b.

[102] In section four I will discuss the case for having rules for sovereign debt restructuring.

in difficulty and that these should also include the "involvement of the private sector". After the initial negative reactions, it was added that these rules would apply after 2013 (to all the bonds on the market or only to those issued after 2013?)[103]. In June 2011, after a new meeting in Berlin, the two leaders spoke of an "involvement of the private sector on a voluntary basis". The statement of the Heads of State and Government of the euro-area on 21 July 2011 indicates the intention to conduct a restructuring of the Greek public debt, but on a "voluntary" basis[104]. At the technical level, the first discussions concerned a possible cut of 20 per cent; towards mid-2011 the discussions centred on a cut of 50 per cent; later in the year the prevailing opinion became that of a 70 per cent cut! The position of the governments was not very clear and the messages transmitted to the market were very confusing.[105]

During the course of 2011, as discussions on the involvement of the private sector proceeded, there was a continual increase in the spread between the interest rates paid on the best government bonds of the euro-area and those of the countries with fragile public finances positions, especially Spain and Italy. In the case of Italy, there was a significant increase in June 2011 that reached critical levels by July/August. This led to serious worries about the capacity of the country to avoid a public finances crisis, which found its expression in the statements of various world leaders and in an unusual letter to the Italian Government co-signed by the outgoing and the incoming presidents of the European Central Bank, Jean-Claude Trichet and Mario Draghi. The result of this pressure was the replacement of Prime Minister Silvio Berlusconi with Professor Mario Monti in November 2011.

The negotiations to come to an agreement on the restructuring of the Greek public debt were long and complicated and go beyond the scope of this paper. As previously mentioned, the first official reference to a possible debt restructuring appeared in October 2010. The statement of the Heads of State and Government of the euro-area dated to 21 July 2011, still more than seven months before the actual debt exchange, mentioned a "voluntary" contribution from the financial sector, which should have led to the cancellation of more than €100 billion. At the same time, the document emphasised the 'unique' character of the solution identified for Greece: "All other euro countries solemnly reaffirm their inflexible determination to honour fully their own individual sovereign signature". This aimed to reassure the markets that a restructuring of the Greek public debt would not be followed by similar operations in other euro-area countries.

Immediately after the July statement, negotiations started with an offer from the Washington-based Institute of International Finance (IIF) on behalf of a group of banks. The actual negotiations saw the formation of a 'steering group' of 12 banks acting on behalf of a larger

[103] The first economic adjustment programme was based on the assumption that Greece would have been able to meet a part of its financing needs through a limited access to the capital markets. This did indeed happen to some extent in the first months of the programme implementation. Later the situation became more difficult, but certainly in October 2010 the beginning of a public discussion on a restructuring of the Greek public debt definitively closed the door to any possibility of Greece still gaining access to the capital markets.

[104] Eurogroup 2011a.

[105] It is perhaps ungenerous to underline this as, for understandable reasons, authorities are often forced to deny what everybody sees as forthcoming. But the Fourth Review of the programme published by the European Commission in July 2011 contained a box indicating why a restructuring of the Greek public debt would be a mistake (European Commission 2011b, pages 7 and 8).

group of 32 creditors that negotiated alongside the IIF. Finally, the process requested the adoption of 'Collective Action Clauses' by the Greek Parliament to be inserted into the law governing the issue of public bonds, the exchange of the bonds held by the ECB and some national central banks of the euro-area, and the adoption of legal texts to set up the 'collateral enhancement scheme'. All of this finally culminated in the Offering Memoranda of 24 February 2012. Readers interested in these events and in the development of the negotiations should consult the papers on this issue mentioned in the references.[106]

4.3 The restructuring of March 2012

Notwithstanding the many official statements on the voluntary character of the forthcoming operation, the cut in the debt was obtained more through the stick than the quality of the carrots[107]. A crucial measure that ensured the operation's success was the approval by the Greek Parliament on 23 February 2012 of some new provisions that were retrofitted into the Greek bond issuance legislation. These made it easier to impose the terms of the restructuring on those bondholders who would not have expressed their agreement. The necessary agreement of the majority of bondholders was obtained thanks to the fact that the largest share of the bonds was held by the Greek banks, which were obviously very dependent on the support of their government; another large group was represented by the banks of the creditor countries on which their governments could obviously lean, to a certain extent.

The operation covered all the Greek Government bonds (GGB) still in circulation, with the sole exception of the €42.7 billion of GGB that the ECB had bought through its operations to support the value of the bonds of some countries in difficulty (the SMP operations, Securities Markets Programme, launched in May 2010) and the €13.5 billion of GGB held by some euro-area central banks.[108] The exclusion of the bonds held by the ECB was for this institution a legal necessity as it maintained that a cut in the nominal value of the bonds would have amounted to monetary financing of the Greek state, but it also appears economically and morally justified. This organisation had bought Greek bonds to lower their interest rate and help the country. It would have been unjustified to punish it for these purchases through the inclusion of its bonds in the restructuring operation[109]. The case of the GGB held by other central banks is different. It is likely that these bonds were bought as part of the normal diversification in the investment

106 Xafa 2013, Xafa 2014, Trebesch et al. 2013 and Zettelmeyer et al.

107 Miranda Xafa, in her analysis of the two operations in 2012 quotes the CEO of a large German bank, who apparently stated that the March operation had been as voluntary as the confessions obtained by the Spanish Inquisition (Xafa 2014, page 13).

108 A very small amount of Greek bonds (around €300 million) held by the European Investment Bank (WSJ 2015a and Trebesh 2013a) was also excluded. Technically, the exclusion of the ECB, EIB and central banks bonds from the restructuring "took the form of a "silent" debt swap: between February 17th and February 21st, 2012, all bonds held by the ECB and other Eurosystem central banks were exchanged into new bonds which were exactly the same as the old ones (same nominal amount, coupon payments and repayment dates) but had different serial numbers (ISINs,). The instruments involved in this "silent" swap were not eligible in the Greek debt restructuring proposal of 24 February 2012. The old bonds (with original ISINs) were exempt because they had been transferred to Greece in the swap and were subsequently cancelled (see the offering memorandum, p. 15). The new, central bank owned ones (with new ISINs) were exempt because the debt restructuring offer only targeted bonds issued "prior to 31 December 2011", thus excluding those issued in the February 17 swap". Trebesh et al. 2103a, page 7. ISIN stands for International Security Identification Numbers, the numbers that uniquely identify a given security issue.

109 In 2013, a group of around 200 Italian nationals attacked the ECB in front of the EU Court of Justice demanding that it make good the loss of €12 billion that they suffered in the restructuring operation, as well as attacking its exclusion from the operation. The Court rejected their plaint (case T-79/13; press release n° 119/15 of 7 October 2015).

of the central bank reserves, in which case the behaviour of these central banks was not different from that of any other investor.[110]

In any case, it was decided to transfer the profits made on the purchase of the bonds held by the ECB and the euro-area central banks to the Greek authorities. According to documentation that the French Government made available to its parliament, these measures should transfer €9.9 billion to the Greek authorities over the period 2013-2025 (with more than €9 billion over the period 2013-2020) for the bonds bought under the SMP programme and €3.9 billion over the period 2012-2020 for the bonds held by the euro-area central banks on their account.[111]

To the stock of Greek Government bonds in circulation were added about €10 billion of bonds issued by public bodies that are not part of 'general government', but carried a guarantee by the Greek state[112]. The theoretical total of the bonds covered by the operation was €205.6 billion. The holders of the bonds to be withdrawn would have received new Greek Government bonds issued under UK law, which is considered to offer a somewhat greater protection to bondholders, with maturities of between ten and thirty years and rates of interest increasing over the years, from an initial 2.0 per cent to 4.3 per cent when approaching maturity[113]. The value of the new bonds was equal to 31.5 per cent of the nominal value of the bonds withdrawn.

In addition, the bondholders taking part in the operation received a 'sweetener' consisting of bonds issued by the EFSF, with maturities of one to two years for a value equal to 15 per cent of the nominal value of the bonds handed in. As a result, in exchange for handing in GGB for a value of 100, the bondholders would have received very high quality bonds (almost cash) for 15 and new long-term Greek Government bonds for 31.5 for a total of 46.5. The operation therefore led to a cut of 53.5 per cent in the nominal value of the bonds covered by the operation.

To make the pill more palatable, it was decided to pay the interest already accrued on the bonds handed in (€4.9 billion paid through short-term EFSF bonds). Some securities that would have incurred additional payments equal to approximately one per cent of the nominal value of the cancelled bonds were also added, should the growth rate of the Greek economy have exceeded what was foreseen at the time!

Thanks to the provisions approved by the Greek Parliament, it became possible to overcome the fact that the positive response to the exchange offer was limited to 85.8 per cent of the eligible bonds and all holders of bonds issued under Greek legislation were forced to take part in the exchange. The amount of bonds which was eventually handed in was equal to €198.1 billion, equating to 96.5 per cent of all the bonds covered by the operation. The holders of bonds with a nominal value of €7.5 billion refused to take part in the operation, (the

[110] The holdings of these bonds by the central banks of the Eurosystem are often referred to as "ANFA holdings" where the acronym stands for Agreement on Net Financial Assets.

[111] French government 2015, page 21.

[112] These were bonds issued by the Hellenic Railways, the Hellenic Defence Systems and the Athens Urban Transport Organisation for a total of €9.8 billion. Trebesh et al. 2013a

[113] For more details see PDMA 2012a and Central Bank of Greece2012a.

so called holdouts).[114] Considering the fact that these were located in 24 different jurisdictions and taking into account the complexity of the legal battles ahead, together with the risk of Greek property seizure in various parts of the world, it was decided to completely reimburse these bonds, notwithstanding the fact that such a possibility had been explicitly excluded before the operation.[115]

The forced bond exchange of March 2012 was an example of a debt restructuring conducted in an "orderly" way, but it was still a default[116]. When the operation was carried out, the rating agencies attributed the 'SD' rating (Selective Default) to Greece; Standards & Poor's had already done the same on 27 February 2012, immediately after the adoption of the revised clauses by the Greek Parliament. The fact that all bondholders under Greek legislation were forced to take part in the exchange led to the operation being considered a default. This was also the case for the application of the insurance contracts known as 'Credit Default Swaps' (CDS). On 9 March 2012, the International Swaps and Derivates Association unanimously decided that a 'credit event' had taken place in the Hellenic Republic that justified the payment of the amounts foreseen under the CDS.[117]

The restructuring of the Greek public debt affected the eligibility of Greek Government bonds as collateral in the ECB financing operations in a rather complex way. It had been feared that a default of the country might limit the ability of the ECB to accept Greek Government bonds as collateral for its bank lending (see section two) and for this reason a 'Collateral Enhancement Scheme' had been foreseen and created. However, as we have just seen, Standard & Poor's credit agency had previously lowered the rating for Greece in February 2012 ahead of the date of the actual restructuring. This led the ECB to announce on 28 February 2012 that the eligibility of marketable debt instruments issued or fully guaranteed by Greece was temporarily suspended. However, the press release stressed that the Eurosystem had in place other mechanisms to satisfy the liquidity needs of the financial system. On 8 March 2012, another press release acknowledged that the activation of the

[114] Xafa 2014 and Zettelmeyer et al. put the figure for the holdouts at €6.4 billion. However, Zettelmeyer et al. also indicate that the figure of €199.2 billion for the total of the withdrawn bonds is overestimated by €1.1 billion of bonds included, but not really handed in (this would justify the figure of €198 billion used by Miranda Xafa). I believe that information on the missing billion is credible, but this leads me to add it to the total for the holdouts, which gives a total of €7.5 billion for the amount of bonds not delivered.

[115] In October 2012, eleven years after the Argentinean default, the training ship of the Argentinean navy, the Libertad, was impounded in the harbour of Tema in Ghana in execution of two sentences issued by courts in New York and London.

[116] In July 2015, Greece defaulted also on its obligations to the IMF. According to Carmen Reinhart, "That makes Greece the first – and, so far, the only – advanced economy ever to do so", (Reinhart 2015, page 2).

[117] The activation of the CDS was one of the elements which contributed to turning the Lehman Brothers bankruptcy into an event that crippled the whole financial system. In 2010, one of the factors that led to the decision to avoid a Greek default was the fear that this could have effects on the whole European financial system. However, while the bankruptcy of Lehman Brothers activated the payment of compensation for $75 billion, at the time the Greek public debt was restructured there were CDS on it for only €3 billion. The high probability of a restructuring had led to such an increase in the premia that most bondholders declined to take a CDS on their holdings of Greek debt. The activation of the CDS on the Greek bonds in March 2012 did therefore not have any substantial effect (see Zettelmeyer et al. and European Commission 2012a).

Collateral Enhancement Scheme allowed the acceptance of these instruments again. This acceptance came to an end on 25 July 2012, with the termination of the Scheme.[118]

The partial reimbursement made on the bonds handed in led to the net effective cancellation of €106 billion of Greek Government bonds. This was the loss collectively suffered by the bondholders, i.e. the difference between the nominal value of the bonds delivered and the nominal value of the bonds received in exchange. The operation was obviously made politically possible by the fact that the majority of the bondholders had already lost hope of being totally reimbursed. The pain inflicted by the operation was equal to the difference between the 46.5 per cent that the bondholders effectively received and what each investor was still hoping to recuperate on this investment turned sour.[119]

4.4 The debt buy-back of December 2012

In December 2012 a new restructuring operation took place. Given the marked deterioration in the Greek economy (and the slowdown of all European economies) it became possible to buy back a share of the new Greek Government bonds issued in March for a fraction of their nominal value. Bondholders were offered to sell back the bonds just received in exchange for about a third of their nominal value.

The holders of bonds totalling €31.9 billion accepted the offer and received in exchange RFSF short-term bonds for an amount equal to around 35 percent of the nominal value of the bonds handed in (€11.3 billion). This operation enabled the additional net cancellation of Greek Government bonds totalling almost €21 billion (see Table 9). The two operations conducted in 2012 led to the cancellation of approximately €127 billion of a total of €198.1 billion of bonds handed in. The cancelled bonds represented around 40 percent of the total amount of Greek Government bonds in circulation at the moment the crisis broke out and around two thirds of Greece's gross domestic product in 2012.

After these two operations, the amount of Greek Government bonds on the market was equal to around €37 billion, most of them essentially medium- to long-term bonds issued in March 2012[120]. However, the amount of outstanding Greek Government bonds at the end of 2012

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[118] ECB Press releases of 20 February, 8 March and 20 July 2012 (ECB website). In December 2012, the Governing Council of the ECB decided to again accept Greek Government bonds as collateral, subject to haircuts. This decision was based on the positive assessment given by the European Commission, the ECB and the IMF of the implementation of the current economic adjustment package. This decision was reversed in February 2015 when the Governing Council decided that it was not possible "to assume a successful conclusion of the programme review" (see the press releases of 19 December 2012 and 4 February 2015). However, at the beginning of 2015, the importance of the eligibility of Greek government bonds as collateral had decreased substantially as the Greek banks held a very limited amount of such bonds (around €5 billion).

[119] I find it rather surprising that a discordant voice in defense of the Greek banks strong-armed into participating in the two restructuring operations was that of Yanis Varoufakis in an entry of 12 December 2012 in his blog ('Greek Debt Buyback – another sad verdict surrounded by much merriment'). He writes: "Whether these losses have been factored in the banks' recapitalization needs is irrelevant to the plain fact their holdings of Greek government bonds were savagely haircut. A haircut is a haircut regardless of whether you have accounted for it". http://yanisvaroufakis.eu/2012/12/12/greek-debt-buyback-another-sad-verdict-surrounded-by-much-merriment/

[120] Zettelmeyer et al. indicate an amount of €35 billion. The bonds on the market were the new Greek bonds issued in March and not resold in December (62.4 less 31.9) and the €7.5 billion in the hands of the holdouts (the holders who had refused to take part in the forced exchange and could do so as they were holding bonds not issued on the basis of the Greek legislation: €27 billion out of the €206 billion covered by the exchange operation). See also note 36 and table 7.

was equal to €86.1 billion, as to the €37 billion on the market must be added the €49.1 billion of bonds held by the ECB and other euro-area central banks (Table 5).

The two operations replaced bonds of a nominal value of €198.1 billion, with an average maturity just below four years[121] and interest rates between five and six per cent,[122] with bonds for a nominal value of €30.5 billion with an average maturity of 20 years and an average interest rate of just above three per cent. The payment made against the net reduction of €167.6 billion (198.1 minus 30.5) in the amount of bonds in circulation was only €41 billion in the form of EFSF bonds, with maturities between six months and two years, around 25 per cent of the nominal value of the bonds. On the basis of the nominal value of the bonds handed in and received in exchange (including the EFSF bonds), the average cut was 63.9 per cent, but on the basis of the 'net present value' of the bonds handed in and of those newly-issued, the cut was certainly higher.[123]

Even though, as it has just been shown, the two operations resulted in the cancellation of Greek government bonds totalling €126.6 billion, the net effect on the Greek public debt was somewhat smaller. In effect, €12.2 billion worth of the cancelled Greek Government bonds were held by other parts of the national accounts aggregate 'General government' (usually taken as the reference for the public sector). They were essentially social security bodies. The net effect of the two operations on the Greek public debt was therefore €114.2 billion.[124]

The recapitalisation of Greek banks

The restructuring operations, however, resulted in an even smaller reduction in the amount of Greek public debt than the €114 billion just indicated, as new expenditure became necessary, which in turn led to an increase in public debt, albeit to a smaller extent than the cuts. As had been underlined by the ECB, the cut in the value of the Greek Government bonds opened up a significant gap in the accounts of the Greek banks that would not only have hindered their capacity to extend credit to the economy, but would have probably led to their collapse.[125] The Greek central bank estimated that the restructuring of the Greek public debt of March 2012 led to a loss of around €38 billion for the Greek banking system.[126]

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121 Author's own calculations based on data published in the Hellenic Republic Public Debt Bulletin n° 64.

122 Rather cautious estimate based on the data of the Hellenic Republic Public Debt Bulletin n° 57.

123 The Report of the Truth Committee contains a very surprising comment on the restructuring operation: "The total amount of debt prior to the exchange was reduced in February 2012 by €106 billion. This decrease failed to reduce the debt burden of the country as a new loan agreement totalling €130 billion was settled." (Truth Committee 2015, page 20). This statement recognises the fact that €106 billion worth of Greek Government bonds were cancelled, but the comparison with the €130 billion loan from the euro-area and the IMF is totally misplaced. This loan covered the cost of the March 2012 restructuring (€29.7 bn, already included in the calculation that leads to the figure of €106 billion of cancelled bonds), the cost of the December buy-back (€11.3 billion), the cost of the bank recapitalisation (€37.3 billion) and the other financing needs of the Greek Government until the end of 2014 (€52.7 billion).

124 See Eurostat, *Reporting of Government Deficits and Debt Levels*, Greece, 13 October 2015 http://ec.europa.eu/eurostat/documents/1015035/7039947/EL-2015-10.pdf

125 Athanasios Orphanides (Orphanides 2014) estimates the losses borne by the banks of Cyprus as a consequence of the Greek debt restructuring of March 2012 to be €4.6 billion. This figure is equal to around one quarter of the country's GDP in 2012 and was certainly a contributing factor to the Cyprus crisis that ensued one year later.

126 €37.7 billion. Central Bank of Greece, 2012a.

Table 9: Restructuring of the Greek public debt (€ billion)		
Compulsory exchange of March 2012		
a) Greek Government bonds issued before 2012 and still in circulation	261.8	
b) Bonds held by the European Central Bank	42.7	
c) Bonds held by the central banks of some euro-area countries	13.5	
d) Bonds covered by the compulsory exchange (a-b-c)[127]	205.6	
e) Bonds delivered[128]	198.1	
f) New long-term Greek Government bonds	62.4	
g) One-two-year bonds issued by the EFSF	29.7	
h) Total compensation offered (f + g)	92.1	
i) Bonds cancelled (debt relief) **(e – h)**		**106.0**
l) Percentage reduction obtained (i / e)	53.5 %	
Buy-back of December 2012		
m) Bonds covered by the operation (the bonds under line f)	62.4	
n) Bonds delivered	31.9	
o) Compensation offered (six months EFSF bonds)[129]	11.3	
p) Bonds cancelled (debt relief) **(n – o)**		**20.6**
q) Percentage reduction obtained (p / n)	64.6 %	
Nominal value of the bonds cancelled in the two operations (i + p)		**126.6**
1) The operation covered bonds issued before 2012. Included in the amount of eligible bonds were about €10 billion of bonds issued by public bodies not part of "general government", but with a state guarantee		

The European Commission and ESM documents indicate transfers of €48.2 billion to Greece for the recapitalisation of the banks; €41 billion in 2012 and €7.2 billion in 2013[130]. However, €10.9 billion was not utilised and was consequently reimbursed. The EFSF/ESM website[131] indicates that these bonds had been initially transferred to the HFSF and were transferred back on 27 February 2015 and thereby cancelled.[132] The transfers to Greece for the recapitalisation of its banks following the 2012 Greek public debt restructuring were therefore equal to €37.3 billion. In assessing the net impact of the restructuring on the Greek public debt, Zettelmeyer *et al.* use the figure of €25 billion that was transferred in the first quarter of

127 I have used the figure indicated by Zettelmeyer et al. and the European Commission that appears more coherent with the rest of the other available figures. Miranda Xafa uses the figure of €205 billion while the press release of the Greek Agency for the Management of the Public Debt mentions a figure of "around € 206 billion" (PDMA 2012a). The European Commission, quoting the PDMA, indicates a figure of €205.57 billion (European Commission 2012a).

128 Also, for this figure there is a difference between the one quoted by Zettelmeyer et al. (€ 199.2billion), apparently quoting official Greek data, and the €198 billion indicated by Miranda Xafa. Zettelmeyer et al. appear to be correcting their own figure when they explain in a footnote that the difference of €1.1 billion compared to the figure quoted by other sources for the amount of bonds handed in is due to a bond issue of €1.78 billion, for which bonds totaling only €0.67 billion have been handed in, but that was erroneously taken into account for the full value of the issue. They also indicate that the remaining amount of bonds were withdrawn at a later date "at even better conditions for the Greek state". I therefore use the figure of €198.1 billion and add the €1.1 billion withdrawn later to the amount of bonds not handed in (holdouts). The ESM website states instead a figure of €197 billion for the total amount of the bonds handed in (ESM 2015a).

129 Zettelmeyer et al, the ESM (ESM 2015a) and the Greek central Bank (GCB 2013a, pages 173-174) have the same figure that I use. Miranda Xafa indicates instead a figure of €10.8 billion for the cost of the buy-back.

130 European Commission, 2013a, page 21.

131 The European Stability Mechanism (ESM) was created through an intergovernmental treaty that came into force on 8 October 2012, thus replacing the EFSF.

132 ESM 2015c and EFSF 2015b. Until the end of February 2015, this amount was part of the sum that could have been lent to Greece under the second programme, if it had been possible to reach an agreement.

2012, together with the disbursements for the restructuring.[133] In her paper, Miranda Xafa uses the figure of €38 billion instead.[134]

However, the recapitalisation cost of the Greek banks that can be directly attributed to the restructuring operation of March 2012 differs from the actual recapitalisation carried out in 2012/2013. The fact that the two figure mentioned in the previous two paragraphs (losses incurred by the banks because of the restructuring and cost of recapitalisation) are practically identical is a pure coincidence. A recapitalisation of the Greek banks had taken place before 2010 and it was expected that two years of strong recession would have created a recapitalisation need even in the absence of the cut in the public debt. In December 2012, the Bank of Greece published a report on the recapitalisation and restructuring of the Greek banking sector that was elaborated with the help of BlackRock Solutions.[135]

This report quantified the losses suffered by the Greek banks as a consequence of the restructuring operation to be the previously known figure of €37.7 billion. But it estimated the so-called Credit Loss Projections, i.e. the losses the banks would have suffered on their commercial portfolios over the period 2011-2014, to be €46.8 billion. Taking into account the provisions already made, the size of the reserves and the capacity of the banks to generate capital internally through their activities, the report concluded that the expected bank recapitalisation needs were €40.5 billion (we now know that the figure actually spent was €37.3 billion) against losses totalling €78.2 billion (37.7 plus 40.5). This means that the impact of the debt restructuring operation was equal to around 45 per cent of the total cost of the Greek banks recapitalisation exercise. This means an impact of around €17 billion.

The conclusion is that the effective cut in the Greek public debt obtained through the two interventions during 2012 was not equal to the €127 billion lost by investors, nor to the €114 billion for the reduction of the general government gross debt, but actually consisted of around €97 billion.

4.5 Comparisons with other restructuring operations

Zettelmeyer *et al.* and Xafa stress that the restructuring of the Greek public debt in 2012 was the largest operation of its kind ever carried out. This is not only true in nominal terms, but also in real terms. According to Zettelmeyer *et al*. the Greek debt restructuring was larger than the previous largest operation carried out: the Russian default of 1918 on £ 1.7 billion. The cut in the Greek public debt (equal to 65 per cent of the Greek GDP of 2012) was larger not only than the cut in the German public debt of 1953 (a relatively small operation equal to around 15 percent of the then German Federal Republic's GDP), but also larger than the much more significant operation of 1932-1933 on a German debt largely resulting from the Versailles reparations[136]. The difference in size between the Greek operation and its antecedents is also due the fact that today the level of public debt *vis-à-vis* their GDPs in most

[133] Zettelmeyer et al, page 22.

[134] Xafa 2014, page 10.

[135] Bank of Greece 2012a.

[136] For a discussion of the comparisons with the cuts in the German debt see Francesco Papadia, 9 February 2015, "Should the Greek debt be dealt with as the German one was?" http://moneymatters-monetarypolicy.eu/should-greek-debt-be-dealt-with-as-the-german-one-was/

countries is much higher than in the past. F. D. Roosevelt's New Deal is rightly seen as the archetype of a Keynesian economic policy aimed at supporting demand through an increase in the public deficit. What many people do not seem to be aware of is that when F.D.R. launched this policy the debt to GDP ratio in the USA was about 20 per cent and that in 1938, after most of the New Deal had been introduced, it was still below 40 per cent.

The paper by Zettelmeyer *et al*. presents various estimates of the cost inflicted to the bondholders going beyond a simple comparison of the nominal value of the bonds handed in and of those received. They present various estimates of the net present value of what was tendered and what was received (the Greek Government bonds handed in were certainly worth less than their nominal value, but the bonds issued in exchange were also worth less than their nominal value). Their estimates place the cost for the bondholders at percentages varying between 59.6 per cent and 64.6 per cent[137], which enables them to compare this operation to previous ones. Their conclusion is that the 2012 Greek operation was not the toughest one ever imposed on creditors, although it was one of the toughest to have ever occurred. The Greek 2012 operation was slightly less onerous than the cut in the Argentinean public debt of 2005, but it was harsher than the cut imposed by Russia on its creditors in 2001 and was tougher than the well-known 'Brady operations' conducted in many Latin American countries in the nineties.[138]

Question N° 12: ***How many Greek Government bonds were cancelled?***

Via the two operations carried out in 2012, Greek Government bonds for €127 billion were cancelled. Bonds worth €106 billion were cancelled through the forced exchange of March 2012 and bonds worth €21 billion were cancelled through the voluntary buy-back of December 2012.

Question N° 13: ***What was the percentage cut in the value of the bonds?***

On the basis of the nominal value of the bonds exchanged, the cut resulting from the March 2012 operation was 53.5 per cent. On the same basis, the cut implemented through the two operations was 63.9 per cent.

Question N° 14: ***What has been the effect of these cuts on the Greek public debt?***

Taking into account that around € 12 billion of the cancelled bonds had been detained by other parts of the Greek public administration (other parts of the aggregate called "*general government*") and that the restructuring operation had a direct impact of around € 17 billion on the recapitalisation of the Greek banks, the net reduction in the Greek public debt resulting from the 2012 restructuring operations is around €97 billion.

[137] The range indicated by Zettelmeyer et al, 59-64 per cent, is higher but not very far from the value calculated on the basis of the nominal values: 53.5 per cent. For reasons that I do not understand, a figure of only 24 per cent is circulating among the extreme-left leaning commentators (see, for instance, Zhok 2015 where no explanation is given for this figure).

[138] Zettelmeyer et al, pages 19-20.

Question N° 15: ***How does the Greek public debt restructuring of 2012 compare with similar past operations?***

The 2012 restructuring of the Greek public debt could have been the largest restructuring operation ever carried out (the conditional is imposed by the difficulty of making comparisons between operations very distant in time). On the basis of a detailed analysis of the net present value of the bonds exchanged, the restructuring of the Greek public debt of 2012 has not been the toughest operation ever inflicted on creditors, but it has been one of toughest.

4.6 The restructuring of the debt towards the euro-area countries

The official language is full of euphemisms and nice sounding acronyms that try to sweeten the underlying reality. 'Private sector involvement' (PSI), the euphemism used to describe the forced cut of the Greek public debt held by private creditors, has its counterpart in the 'Official sector involvement' (OSI); i.e. a cut of the debt *vis-à-vis* the euro-area countries. The IMF has the statute of preferred creditor that nobody wants to question, although the modalities of its intervention in Greece have raised some eyebrows.[139] This means that the debt *vis-à-vis* this institution cannot be restructured and that any restructuring of the Greek debt towards official creditors can only apply to the debt *vis-à-vis* the euro-area that, in any case, represents the largest part of the official loans extended: €205.2 billion out of a total of €222.1 billion (€237.3 billion minus the €15.2 billion of reimbursements that have already been made to the IMF), i.e. 92.4 per cent of the total net disbursements until end 2015 (Table 2).

Nominal value vs. net present value[140]

The lengthening of the maturities of the loans and the reductions in the interest rates that were decided in 2011 and 2012 (presented in section 2.2) dramatically reduced the effective value of the Greek debt towards the euro-area countries. These measures represent the contribution that the 'official' sector has made so far to the lightening of the Greek public debt burden, the OSI. On its website the ESM presents a document with some estimates of the contribution made to Greece's financing needs by the individual measures.[141] The reduction in the interest rates and their partial deferral to 2022 is estimated to have reduced the Greek financing needs by €12.9 billion over the period 2010-2022. However, the most important figure made available is an estimate of the reduction in the net present value of the Greek debt *vis-à-vis* the euro-area countries, which should today be worth around half its nominal value given the very low interest rates and average maturities of around thirty years[142]. Two researchers at the Kieler Institut für Weltwirtschaft have arrived at practically the same conclusions while Schumacher *et al*. obtain an even lower value for the net present value of the Greek debt towards the euro-area

[139] See, for instance, Schadler 2014a.

[140] The net present value (NPV) is defined as the current value of future cash flows (for instance, the repayment of a given bond or the payment of a coupon). In the case of the outstanding public debt of a country this is equal to the sum of the present value of all the bonds and loans issued or contracted by the country. The estimates of the net present value depend on the discount rate used to compute the present value of a future cash flow.

[141] ESM 2015a.

[142] If this calculation may appear surprising, it is useful to check the one completed by Hugo Dixon on the net present value of the reimbursement of the new €86 billion loan to Greece: €31 billion! (Dixon, 2015a).

countries.[143] Even taking an average figure between these estimates, the ratio between the net present value (the effective value of what Greece will eventually repay) and the GDP of the country was, at the end of 2014, around 126 per cent, whereas the ratio between the nominal value of the debt and GDP stood at 177 per cent.

The 126 per cent estimate is based on the fact that at the end of 2014, the debt *vis-à-vis* the euro-area represented 58 per cent of the total Greek public debt. With the granting of the loan under the third programme the share of the debt *vis-à-vis* the euro-area will increase further and the ratio between the net present value of the Greek debt and the country's GDP will decrease further (this justifies the surprising statement of Hugo Dixon who wrote that with the decision to lend Greece another €86 billion at more or less the same conditions of the previous loans, the euro-area countries have de facto granted Greece €55 billion of debt relief[144]). Schumacher *et al*. calculate that on the basis of the net present value the debt/GDP ratio of Greece is in an intermediate position between those of Italy and France[145].

However, it is important to understand the implications of this strong reduction in the net present value of the Greek debt towards the euro-area countries. The calculation of the net present value of a future cash flow depends strongly on the reference interest rate used. In the case of Greece, to this end, it is legitimate to take a realistic estimate of the interest rate that the country would have paid if it had continued to have access to the market (or would pay on its return to the market after having restructured its economy and returned to steady growth). Whatever reasonable rate one uses, the result will always be that the net present value of the Greek debt is significantly lower than its nominal value. Therefore, Greece benefits considerably from the reduction of the net present value of its debt towards the euro-area countries that has already taken place.

But to what extent is this reduction a cost for the creditors? The answer is different when comparing the bilateral loans and the EFSF/ESM loans. With respect to the bilateral loans (Greek Facility Loans), I believe that the rate to be used in calculating the net present value of what the creditors will receive as a reimbursement should be an estimate of the average funding cost of their public debt (even if the argument that the reference should be the 'opportunity cost', i.e. the interest rate paid on a loan to Greece at market conditions, has some merit). This means that a number of countries will receive as a reimbursement an amount that has a lower value than the money they lent in 2010. However, the loss for each creditor country is likely to be smaller than the gain on the specific loan made by Greece, if the funding cost of the country concerned is lower than that for Greece (if the view is taken that, in case the appropriate reference rate is the market rate for loans to Greece, the difference between the cost for the creditor and the advantage for Greece disappears entirely).

The situation is quite different for the loans made through the EFSF and the ESM. Here Greece certainly gains considerably as the interest rates it pays are much lower than those it would have to pay on the market and those one would have to use in any calculation of the net present value of the Greek debt towards the EFSF or the ESM. Having said that, there is no cost for the

143 Fiedler et al 2015a and Schumacher et al. 2015a.

144 Dixon, 2015a.

145 Schumacher et al. page 12.

creditor countries. As long as the interest rates paid by Greece cover the funding costs of the EFSF and ESM, there will be no costs incurred for the creditor countries. Costs would only arise in the event of failure to repay the principal. The gain to Greece, with no cost for the creditor countries if the principal is repaid, is due to the fact that the country is able to finance its debt at the conditions globally available to the euro-area countries. The loans to Greece under the EFSF and ESM – €217 billion – are *de facto* the first large-scale application of the Eurobonds principle to the public debt of an EU country.[146]

As will be explained in section 5.1, the euro-area governments decided to proceed by means of lengthening the maturities and lowering the interest rates in order to hide from their electors/taxpayers the possible cost of the reductions in the value of their loans to Greece. However, to the extent that they have succeeded in this goal, they have also created a situation wherein they are hardly able to take credit for the generosity shown thus far, and the political pressure for an outright cut in the Greek debt towards the euro-area countries remains unabated.

4.7 A bigger cut in the Greek debt via a restructuring in 2010?

To improve the debt sustainability of the Greek public debt (and to ensure that private creditors would have received an even lower share of the official assistance extended to Greece), it would have been necessary to engineer an even larger cut in the Greek Government debt. This begs the question of whether it would have been possible to obtain a larger debt cancellation if an operation had been carried out in 2010 instead of 2012. The two operations of 2012 (the forced exchange in March and the debt buy-back in December) enabled the cancellation of €127 billion of Greek Government bonds. After the second operation the amount of Greek Government bonds still on the market was equal to €37 billion, consisting mainly of long-term bonds (see Table 5).

An earlier restructuring could have avoided a higher burden on the Greek banking sector. Between 2010 and 2012 the composition of the bondholders changed in a non negligible way. In 2010 it was estimated that the share of Greek Government bonds held by non-residents could have been as high as 70 per cent[147]. However, by the beginning of 2012, this share was probably down to around 60 per cent, with almost one third of the total marketable Greek debt held by 'non-residents' having been bought by the ECB, which means that the share held by private non-resident creditors was around 40 per cent.[148] In fact, non-residents had already started reducing their holding of Greek debt during the course of 2009.[149] This is a well-known tactic, known in the jargon as "running for the exit", which often appears at the first sign of difficulties.[150] The IMF gave several warnings, stating that delaying a debt intervention could significantly reduce its effectiveness.

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146 The risk of the loans that the ECB extends to the commercial banks is also mutualised among its shareholders, but the mechanism set up with the EFSF and ESM replicates much more closely the idea behind many of the Eurobonds proposals.

147 Financial Accounts of the Bank of Greece, "Liabilities of General Government".

148 Merler – Pisani 2012a.

149 The minutes of the IMF Board meeting that authorised the loan to Greece in 2010 (IMF 2010a) indicate that: "The Dutch, French and German chairs conveyed to the Board the commitments of their commercial banks to support Greece and broadly maintain their exposure." (page 3).

150 See, for instance, De Haas – Van Horen, 2011.

This means that carrying out the restructuring of the debt in 2012 instead of 2010 has not only reduced the amount of Greek Government bonds that could be covered by the measure, but has also shifted the burden of the restructuring towards the resident bondholders and away from the 'non-resident'. This will have increased the impact of the measure on the domestic banking sector and on its recapitalisation needs, thus enabling a smaller overall reduction of the Greek public debt.

The expectation of a bigger reduction in the Greek public debt through a restructuring in 2010 is based on the assumption that it would have been possible to apply a percentage cut, similar to the one applied in 2012, to a larger amount of Greek Government bonds than were still on the market in March 2010, i.e. to more than the €205 billion covered by the forced exchange. If the cut were to have been conducted in May 2010, the total of bonds covered would have certainly been increased by the €58 billion reimbursed between May 2010 and the beginning of March 2012. To this might also have been added the bonds bought by the ECB under the SMP operations (which started in May 2010 and probably would not have included Greek Government bonds if a restructuring operation had been underway) and part of the bonds bought by some euro-area central banks (no information is publicly available concerning when the Eurosystem central banks bought the Greek Government bonds).

In any case, as previously mentioned, the gains obtained through the purchase of Greek Government bonds by the ECB and the euro-area central banks are being returned to the Greek authorities to the tune of €14.0 billion[151]. These gains result essentially from the difference between the purchase price, usually well below parity, and the full reimbursement at bond maturity. The inclusion or exclusion of the bonds held by the ECB and the euro-area central banks does not therefore have a one to one effect on the total bond reduction.

The situation is more straightforward regarding the inclusion in a hypothetical restructuring conducted in May 2010 of the €58 billon of bonds that have been reimbursed between the beginning of the crisis and the beginning of March 2012. If the same percentage cut (53.5 per cent) were to have applied to these bonds this would then have allowed the cancellation of an additional €31 billion of Greek Government bonds.

It is, however, doubtful that it would have been possible to already implement the restructuring in May 2010 and, above all, that it would have been possible to apply the same percentage cut obtained in 2012. A restructuring operation in May 2010 would have meant that all policy makers would have been immediately convinced that the reasons to fear a Greek default were not very solid. But even if this were to have been achieved, it is unlikely that it would have been possible to obtain the percentage cut in 2010, which was made possible in 2012 by the change in the economic situation of Greece.

In May 2010 the perception of Greece's economic difficulties was very different from the one that prevailed in 2012 or that of today. Initially, some had even stated that the Greek difficulties were only due to a temporary liquidity crisis, which could have been solved with

[151] French government 2015, pages 20 and 21.

the injection of just €40 or €50 billion[152]. At the outbreak of the crisis, many people really believed that Greece would be able to recover from its difficult situation within a few years. In July 2010, after the agreement on the first rescue package, Greece was able to raise €4 billion on the capital markets, with six and twelve-month bills at a very reasonable rate of interest[153]. The first reports on the implementation of the economic adjustment programme were rather positive. However, the situation deteriorated dramatically during the course of 2011 and, above all, in 2012 (also because of the political instability: the resignation of Prime Minister George Papandreou, the appearance of a possible 'Grexit' in the policy discussions, a new government under Lukas Papademos, two general elections and, finally, a national unity government bringing together three parties).

The first discussions on a possible debt restructuring were based on a potential cut of around 20 per cent. Later on, the discussions moved towards a 50 per cent cut increasing to 70 per cent towards the end of 2011. The forced exchange was finally based on a 68.5 per cent cut, minus a 'sweetener' equal to 15 per cent, resulting in an effective cut of 53.5 per cent. In a box containing the proposals to restructure the Greek public debt inserted into the Fourth Review of the programme published by the European Commission in July 2011, there is an assumption of a 40 per cent cut of the Greek public debt, but only to show that a restructuring would have had very negative consequences.[154]

If it had been agreed to restructure the Greek public debt during the course of 2010 it is very unlikely that it would have been possible to impose a 53.5 per cent cut, as happened in March 2012. To obtain the same public debt cancellation (€106 billion) the cut would have needed to be between 40 and 47 per cent, depending on the amount of bonds covered. The first figure assumes that all bonds would have been included; the second assumes the inclusion of only €58 billion of bonds, which were fully reimbursed between May 2010 and the beginning of March 2012. It is therefore possible that a restructuring of the Greek public debt in 2010 would have been conducted with a significantly lower percentage cut and would have resulted in a lower cancellation of Greek public debt, even if this cut would have applied to a higher volume of bonds.

One must also not forget the practical aspects. In order to impose the forced exchange it was necessary to obtain parliamentary approval for retrofitting new provisions into the Greek legislation regarding the issuing of public bonds. The negotiations with the bondholders also took months. With the level of knowledge and awareness of a default available to the European governments in 2010, no operation would have been possible until well into 2011. By way of comparison, the agreement on the restructuring of the Argentinean public debt was reached in 2005, almost four years after the default.

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152 In 2010, notwithstanding the fact that many economists had argued that Greece was in an insolvency situation, it was wrong but understandable to think that it was instead simply undergoing a liquidity shortage. It is perplexing, in the light of everything we have seen hitherto, that this idea still persists today. Yet the idea certainly is still alive and is sometimes expressed even by well-known political figures.

153 Hellenic Republic Public Debt Bulletin N° 59.

154 European Commission 2011b, page 7.

In any case, to obtain a larger cut in the Greek public debt, it would have been necessary to accept a resounding default in 2010. One possibility would have involved allowing the IMF to act alone. Given the limited resources available, this organisation would have had to engineer a draconian cut in the public debt, something that, I believe, would not have been politically possible. It would not have been accepted by the majority of the European public opinion; it would probably not have been accepted by the very people who today complain about too much money having gone to the banks.

5. Some open policy questions

This section looks at some open policy questions that have been highlighted by the IMF and euro-area intervention supporting Greece. The section will not attempt to discuss them in an exhaustive way nor arrive at policy conclusions. The aim is to explain what is at stake, what are the technical constraints that limit the choices and the characteristics of any political considerations that will have to be taken into account.

The first policy question, and a pressing one, is the possibility of further cuts in the Greek public debt towards the euro-area creditors. This is an issue where the technical constraints are secondary and where political considerations *stricto sensu* will inevitably determine the outcome.

The second policy issue regards the opportunity of reducing the incentives that today encourage commercial banks to buy government debt, perhaps through the introduction of limits on the accumulation of debt from a given sovereign. Today, government bonds issued by the state where a bank is located and in its national currency are considered to carry an extremely low risk. However, changing this situation may lead to some increase in the interest rates that governments have to pay on their public debt. Nevertheless, action in this direction appears urgent in order to achieve one of the main objectives of the European banking union: the de-linking of sovereigns from their banking systems.

The third policy issue concerns the effects of the extension of the aforementioned prudential rule to all government bonds issued in euro by any euro-area member state. This led, as intended, to large capital flows from the countries with excess savings to the countries with an excess of investment and consumption. The outbreak of the public finances crisis in the euro-area led to a marked reversal of this situation with very large differentials (spreads) appearing by 2011. The situation has since improved significantly. The implementation of the various provisions of the proposed Banking and Capital Markets Unions are necessary to achieve the stated goal of similar access to credit, with the differences in the interest rates paid reflecting only the different creditworthiness of the borrowers.

The last policy issue that will be presented in this section is that of accepting the possibility of public debt restructuring of a monetary union member and, therefore, agreeing on some procedures on how it should be conducted. This issue has, obviously, many logical links with the previous ones. The current position of the euro-area on this issue is rather ambiguous and the European Union will have to adopt a position soon.

5.1 The scope for further restructuring of the Greek public debt

One of the main demands of the Syriza Government, which was formed at the beginning of 2015, was an official cut in the level of the Greek public debt. The IMF has subsequently joined this request, up to the point that it has not yet formally decided whether it will take part in the financial support under the third economic adjustment programme[155]. This section will take as

[155] At the end of 2015, the IMF had not yet taken a formal decision on its participation in the third adjustment programme loan. However, the participation of the IMF in the operations of the ESM is foreseen by the treaty establishing the European

its starting point the cuts already made to the Greek public debt towards the euro-area countries (presented in section 4.6) and will examine the scope for further reductions.

Around 80 per cent of the Greek public debt today is *vis-à-vis* official creditors. At the end of September 2015, of around €314.5 billion of the Greek public debt identified by the Greek Public Debt Management Agency, €214.1 billion consisted of euro-area and IMF loans[156], while some €26 billion of Greek Government bonds were held by the ECB and some euro-area central banks. The share of the Greek public debt towards official creditors was therefore well over three quarters of the total. The future disbursements of the loan under the third economic adjustment programme will further increase this percentage. Any significant further restructuring of the Greek public debt must therefore involve its official part with inevitable consequences for the taxpayers of the euro-area countries.

'Haircut' or 'Reprofiling'?

Any restructuring of the Greek debt *vis-à-vis* the euro-area countries raises strong political hurdles, as in some member states the granting of large loans to Greece was a controversial operation. There are two main ways in which the Greek public debt *vis-à-vis* the euro-area countries could be cut and they both have similar economic effects, but nevertheless have a very different impact on the state budgets, and a very different visibility: a) a cut in the nominal value of the debt (in financial jargon: a 'haircut') and b) a lengthening of the maturities accompanied by a reduction in the interest rates charged (in the jargon: a 'reprofiling'). These differences have an obvious influence on the preferences of all governments.

A cost for the national budgets of a lending operation similar to that of Greece could appear in two cases. First, if there was a negative difference between the rate of interest received on the loans and the rate of interest paid to raise the necessary resources on the capital markets. This second rate of interest varies from country to country, according to its creditworthiness. With the gradual reduction to an almost notional value of the interest rates on the bilateral loans (Greek Loan Facility) this difference would very likely represent a cost for most public budgets. However, this difference is not highlighted in the usual budgetary documentation. Usually the budgets of each country will contain information on the amount of interest paid on the public debt, without making distinctions according to the reasons why it has been incurred.

The creation of specialised facilities to support member states in difficulties, initially the EFSF and then the ESM, has made life easier for the euro-area countries. They have had to supply the pre-paid capital of the organisations (€80.1 billion for the ESM[157]), but they do not incur costs in the event of new operations. Thanks to the existence of the ESM, the granting of a new €86 billion loan to Greece for (third programme) does not entail further

organisation ("Whereas" n° 8: "The ESM will cooperate very closely with the International Monetary Fund ("IMF") in providing stability support. The active participation of the IMF will be sought, both at technical and financial level. A euro area Member State requesting financial assistance from the ESM is expected to address, wherever possible, a similar request to the IMF."). It is conceivable that the IMF might finally decide to participate with a symbolic amount.

156 Hellenic Republic Public Debt Bulletin n° 78.

157 ESM 2015b, page 69.

costs for the member states (costs can only appear in the case of significant losses on the loans granted).

The second possible source of costs for the public purse is obviously any difference between the value of the amounts lent and that of the amounts paid back. Here the conventions used in the public accounts play a significant role. If a state borrows a certain amount of money and with the proceeds buys a financial asset with an identical nominal value, the operation does not represent expenditure. The financial position of the state has not been modified; the state has a new debt and a new credit of the same amount. However, if a decision were to be officially taken to modify the value of the credit, for instance by cutting its value by a certain percentage, the reduction in the value of the credit would immediately become an expenditure, which will have to be entered in the state budget for the year in which the decision was taken. This additional expenditure would have to be added to the expenditure and the deficit already foreseen.

The situation is very different in the case of a change in the real value of the credit due to a lengthening of the maturities and a lowering of the rate of interest. Everybody understands that a loan of a 100 and a reimbursement of 100 after twenty years implies a substantial loss for the lender; the real value of the reimbursement is much lower than that of the amount originally lent. However, this effect is not captured by the accounting practices of most states: as long as the nominal amount of the credit remains the same, there is no new expenditure to be taken into account.

This explains why the euro-area governments have always been against the idea of an official cut in their credit *vis-à-vis* Greece, but have been amenable to a strong reduction, in some cases almost a cancellation, of the interest rates paid by Greece and to a substantial lengthening of the maturities of the loans. A 'haircut' would show up immediately in the public accounts and would be politically embarrassing. Let's assume that in a given year the euro-area countries were to decide on a cut of 50 per cent in the official value of the 2010 bilateral loans (the €52.9 billion loan); the governments of all member states would have to include in their budgets an additional expenditure equal to half the sums listed in Table 1. These would be large amounts, typically around a third of a point of GDP. It is easy to imagine how populist and nationalist forces would make use of such a development. A 'reprofiling', i.e. a substantial lengthening of the maturities accompanied by a strong reduction in the interest rates would have the same economic effect, but would be almost invisible. Any loss on the difference in the active and passive interest rates would be spread over thirty years and the loss in the real value of the amount reimbursed would never show up in the budget figures.

The euro-area countries have already made a substantial gesture towards Greece, but for the reasons just explained they have preferred to disguise it under the technical modalities of the reprofiling. If now, for political reasons, these countries will be forced to accept an official cut of the debt (a haircut) this will inevitably come on top of the effective reduction in the value of the debt already granted.

The distinction between the part of the reprofiling that has a cost for the creditors and that which does not (see section 4.6) will also carry political weight. The lengthening of the maturities and the lowering of the interest rates on the debt due to the euro-area countries has

certainly significantly reduced the burden of this debt for Greece. However, while the reprofiling of the €52.9 billion loan of the Greek Loan Facility has a cost for the creditors, that of the €146 billion disbursed thus far through the EFSF and ESM has no cost for the creditors, as long as Greece pays the full funding costs of these two organisations. It is possible that when interest rates return to more normal (higher) levels, there will be some political pressure on the creditors to find an arrangement that will cap the interest payments made by Greece. Depending on the actual modalities, there could be a cost for the creditors.

The euro-area governments have let it be known for some time that a further lightening of the Greek debt burden towards their countries is certainly possible (through lengthening maturities and small residual interventions still possible on the interest rates), but it will depend on a good track record of a number of years in implementing the promised structural reforms. Given that a further intervention on the Greek public debt would not in any substantial way affect the economic policy constraints for Greece over the next few years, the euro-area governments prefer to retain an instrument of political pressure to ensure the full implementation of the reform programme. The recent insistence of the IMF on the need to agree now to a cut in the Greek debt has not been welcome in the euro-area capitals. A possible compromise between the two positions could involve a decision to make further cuts in the Greek public debt by instalments, but to link the implementation of the agreed cut schedule to the achievement of some economic policy objectives.

The reduction in the net present value of the Greek public debt is not sufficiently taken into account in many analyses of its sustainability and, in any case, there appears to be no reason to take a decision on its sustainability now.[158] It is probably correct to think that when Greece will be able to return to the market, it will not be able to issue bonds with a maturity longer than five years and will have to pay a coupon of around 6.25 per cent (assumptions made by the IMF in its document dated end of June 2015). However, this is a problem that will only become concrete from 2020/2030 onwards, if not even later. A debt to GDP ratio of even 120 per cent[159] is surely a very high one that may not be sustainable, but given the importance of the nominal rate of growth in any sustainability assessment, it is not obvious that a decision to officially reduce the public debt needs to be taken now.

Schumacher *et al*.[160] speak of four phases in the 'mis-diagnosis' of the sustainability of the Greek public debt. They identify a first phase in the sustainability analysis from the fall of 2009, when the situation started to raise concerns but it was nevertheless decided that a modest adjustment would be sufficient. The second phase appeared in May 2010, with the recognition of the very dire situation of the Greek public finances and led to the adoption of the first economic adjustment programme. The third, which they dub "the time of reckoning", occurred when it was accepted that a restructuring of the Greek public debt was inevitable. However, this phase led to a moderate satisfaction with the outcome; in 2014 and until the beginning of 2015 the situation was judged rather satisfactory. The fourth and current phase is the one where the euro-area countries and the IMF differ in their analysis of the situation,

158 For a detailed discussion of the debt sustainability analyses of the IMF and the European Commission, see Schumacher et al. 2015a.

159 The 120 per cent debt to GDP ratio was calculated by Schumacher and Weder di Mauro who accept the need for further cuts.

160 Schumacher et al. 2015.

up to the point that the IMF has not yet decided if it can take part in the financial support under the third adjustment programme.[161]

5.2 Why banks buy so much government debt

As was seen in section four, the net impact on the Greek public debt of the 2012 cancellation of €127 billion worth of Greek Government bonds was reduced by the need for the Greek state to incur new debt in order to recapitalise its banks. This was a direct consequence of the fact that the Greek banks held a large amount of Greek Government bonds in their portfolios, on which they suffered very large losses. However, by holding a large amount of government debt, the Greek banks were not behaving any differently from the banks of most other euro-area countries or, indeed, the banks of many other industrialised countries.

The commercial banks of all industrialised countries – those covered by the prudential rules known as 'Basel rules' – have an incentive to invest a large amount of their resources in bonds issued by their country of residence and in the national currency. The prudential rules in force in practically all advanced industrial countries consider these government bonds to carry a very low risk, sometimes even equal to zero. This allows banks to buy government paper without the need to set aside any significant part of their capital. The justification of this position is that a country could always avoid a default through an acceleration in the rate of inflation obtained by issuing central bank money.

This means that a bank, if it invests in government bonds of the type just mentioned, has to set aside little or no capital to cover the risk; whatever the risk the national regulators or the banks assign to government bonds, it is usually much lower than that associated with lending to enterprises or households. There is an ongoing dispute as to the relative responsibility in determining this situation, whether this depends on the Basel agreements[162], the national regulators or on the banks themselves, but, as Daniel Gros writes "the assumption that government debt is riskless permeates all banking regulation".[163]

Banks have always held very large amounts of national bonds, but the percentage has increased in most countries since the beginning of the public debt crisis in the euro-area. This is largely due to foreign banks finally reassessing the risk posed by foreign bonds and thereby reducing their holdings of foreign bonds, together with national banks picking up the slack (sometimes at the discreet urging of their governments).

After the restructuring of the Greek public debt in 2012, it appears difficult to maintain the pretence that national bonds are almost riskless. The loss suffered in March 2012 by Greek Government bondholders was 53.5 per cent in nominal terms and far more in net present value terms. However, not much has changed regulatory-wise. The reticence of governments in accepting a change in this regulatory approach is very strong; understandably they loath the prospects of higher interest rates on their public debt.

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161 Schumacher et al. 2015, section II.

162 See BIS 2013a.

163 Gros, 2013a, page 2. This paper presents a good presentation and discussion of the issue of bank regulation and government bonds.

The fact that the national banks hold so much national debt creates an unwelcome link between the financial health of a government and that of the financial system of its country. For example, if they start having doubts about the capacity of the Ruritarian government to honour its obligations, foreign investors will stop lending to the banks of Ruritania, even if these are well run and largely profitable on their commercial assets. The plans for the creation of a European banking union aim precisely to break this link. However, this goal is being sought through various instruments and as yet, not much has been done to address this particular problem.

It is true that this matter is regulated by international agreements (the Basel rules), but the European countries could, if they wanted, find other ways of addressing the issue. For instance, they could impose diversification requirements on their banks and limit the amount of single sovereign debt they hold. A suggestion in this direction was contained in the so-called Five Presidents' Report of June 2015.[164] The report admitted that some limits might have to be placed on the banks' exposure to sovereigns. In November 2015, the European Commission adopted a Communication on the completion of the banking union, where it indicated its intention to make proposals in this direction on the basis of work being conducted in the European Union's Economic and Financial Committee and the Basel Committee[165]. It will be interesting to see how the European Parliament and the member states will react to these proposals when they are tabled.

5.3 Why European banks have bought so much 'peripheral' government debt

In the European monetary union, the prudential rules on the risk treatment of national government debt issued in the national currency have been extended to cover the bonds of all countries using the euro even if the governments of these countries do not control the creation of liquidity by the central bank. As a result, after the creation of the European monetary union, all euro-area banks started buying much larger amounts of the government bonds pertaining to Portugal, Spain, Italy, Ireland and Greece as a rational response to the regulation in place.[166]

This led to a marked reduction in the differences between the interest rates requested on government bonds of different countries. In the period between the creation of the monetary union, 1 January 1999 and August 2008, the average difference between the interest rates paid on ten-year government bonds (commonly referred to as the 'spread') *vis-à-vis* the rate paid by Germany was reduced to only 15 basis points[167]. The fact that investors were no longer differentiating between the national debts of different countries also meant that,

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164 European Commission 2015a. On page 12 the following statement can be found: "Finally, in the medium term, it may make sense to review the treatment of bank exposures to sovereign debt, for example by setting large exposure limits. This could further de-link financial stability from national public finances." As if scared by the boldness of this statement, the authors of the Report immediately added the sentence: "However, such far-reaching changes to the current framework should only be considered as part of a coordinated effort at the global level."

165 European Commission, 2015d. "The Commission will come forward with the necessary proposals on the prudential treatment of sovereigns", page 11.

166 Merler and Pisani and Danieel Gros observe that in the UK and the US this effect is not so strong. In these two countries banks hold a much lower share of government bonds than in Continental Europe (Merler – Pisani 2012a, page 6; Gros 2013a).

167 Gerlach et al. 2010a, page 1.

notwithstanding the existence of the 'no bail-out'[168] rule in the treaties, they believed that euro-area countries would bail each other out if need be.

After all, the flow of savings from the 'North' of the monetary union towards its 'South' was one of the explicit goals of the endeavour; southern Europe was to have access to financing at practically the same conditions as the strongest members of the union, the only difference being the creditworthiness of the borrower. And it worked.

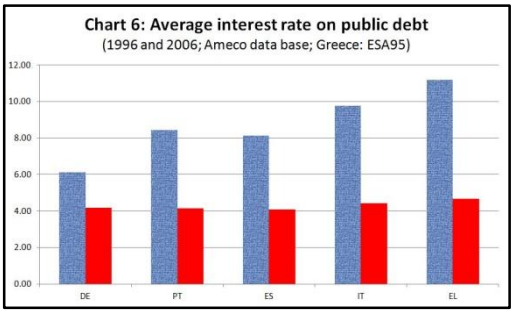

Chart 6 shows two important developments. The first is that if between 1996 and 2006 there was a general reduction in interest rates, this was much more pronounced in the southern part of the monetary union. The second is that by 2006, as we have just seen, the differences between the interest rates on the debt of the various members of the monetary union were very small.

Following the outbreak of public finances crises in some euro-area countries, the flow of private funds towards the 'peripheral' countries came to a halt. From 2010, the differences between public debt interest rates of the euro-area countries started increasing again and have even been creating the monetary policy problems that the ECB has tried to address through its liquidity supply and SMP operations. The 'flight to quality' that has taken place among investors has increased interest rates in the South and reduced them in the *N*orth. For example, in 2009, the average interest rate paid by Germany on its public debt was practically the same as the average of the euro-area countries. From 2010 it progressively descended below this average value. A comparison between the two average interest rates on public debt leads me to estimate that the crisis led to Germany having 'unwanted savings' of around €50 billion on its interest payments over the six year period 2010-2015.[169]

The Halle Institute for Economic Research attempted to estimate these unwanted savings by building a hypothetical path for the interest rates that Germany would have paid in the absence of a crisis.[170] This must also include the effect of the general lowering of interest rates that has taken place in recent years, whereas I have based my calculations simply on the differential between the interest rates paid by Germany and the average rate paid by the euro area. The Halle Institute put these savings at around €100 billion for the same period (2010-2015). Their estimate, while correct in its approach, inevitably introduces an element of

168 Article 125 1. The Union shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project. A Member State shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project.

169 Own calculations on data from the Ameco database of the European Commission.

170 Halle Institute of Economic Research (IWH), Press release of 10 August 2015. http://www.iwh-halle.de/e/publik/presse/30-15.pdf

uncertainty because of the need to develop a counterfactual scenario. In any case, the 'true' figure is probably somewhere within the range defined by these two approaches.

After the political results achieved in the course of 2012, and especially after the "whatever it takes" statement made by Mario Draghi that was itself made possible by these results, the differences between the interest rates paid on government debt started decreasing again and are now much smaller compared to their peak in 2011. The goal here is to achieve a situation where, as previously mentioned, the conditions for accessing credit are substantially the same throughout the monetary union and the differences in interest rates reflect the differences in the creditworthiness of the borrowers, which cannot be always zero or near zero. This goal will have to be achieved through the current discussions of proposals in order to complete the banking and capital markets unions.

5.4 Restructuring the public debt of a monetary union member

Beyond the risk of sparking a series of potentially very serious public finances crises, the other major reason why it took so long to arrive at the conclusion that the Greek public debt had to be restructured is that the euro-area governments and public opinions in these countries were unprepared for such an occurrence. This is due to a combination of explicit policy decisions and the lack of a proper understanding of the concept and implications of a debt restructuring outside the circle of the specialists; i.e. in public opinion and among most political leaders. The European countries have thus far refused to agree on procedures to be followed in the event that the public debt restructuring of one its members were to become unavoidable. Pressure is building towards the elaboration of such rules, but the discussions around this issue are not very visible. This is problematic, as little progress is to be expected as long as public opinion will not recognise that the restructuring of the public debt of a country is certainly an unpleasant event, but it is also a fact of life and sometimes it should be accepted in the very interest of the citizens of the country concerned.

It is understandable that a default is seen as a very unpleasant occurrence. Failure to pay one's debts constitutes a major breach of the trust that is necessary to make an economy work properly. The default of a state always constitutes a major disruption in the economic and social life of a country. It takes years to rebuild the market confidence that such an event destroys and the consequences for the economic performance of a country are very negative (as indeed are the social consequences).[171] However, a cut in the amount of public debt accumulated by a country is very often a necessary condition for a return to better economic conditions and this has occurred frequently in the modern history of many states.[172]

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171 There are economists who maintain that the euro-area should not have abandoned its initial position of avoiding the default of one of its members and that the decision to restructure the Greek public debt was a mistake. See, for instance, Orphanides 2014b.

172 Carmen M. Reinhart and Kenneth S. Rogoff in their well known book *This time is different* (Princeton University Press, 2009) list 36 cases of sovereign default between 1970 and 2008 (table 2.1, page 21). Incidentally, they also refer to the many previous cases of Greek defaults and write "From 1800 until well after World War II, Greece found itself virtually in continual default" (Preface, page xxx), which is an exaggeration, but not by much considering that it is possible to identify at least five cases of Greece defaulting between 1826 and 1932.

The way in which a restructuring operation is carried out can make a great difference. This difference can be seen by comparing what happened in Argentina in 2001/2002 – which led to '*corralito*', '*cacerolazos*' and generally, serious disorder in the cities, which resulted in loss of life – to the 2012 restructuring of the Greek public debt that certainly profoundly affected Greek economic life, but that went almost unnoticed by the public opinion of other countries. It is therefore important to have procedures in place in order to ensure that, in the unfortunate situation that a restructuring has to take place, the available resources are allocated in a fair way. This is the purpose of bankruptcy legislation in all countries, which lays down the procedures to be followed in the case of insolvency and the rules to be observed in order to obtain the best overall result for society as a whole in the case of such an unfortunate occurrence. However, cultural difficulties can have an impact too, as in some countries not honouring debts carries a much more negative stigma than in others.

At the global and European levels, however, there are no agreed rules and procedures on how to deal with the restructuring (default) of a state. This is because all governments are afraid that drawing up such rules and procedures would remind investors that government bonds carry some risk and would in turn lead to higher interest rates on their public debt. And yet, the no bail-out clause in the Treaty of Lisbon[173], to a certain extent goes in this direction: the absence of a bail-out increases the probability of a default.

Following the default of Argentina in 2001, the IMF started reflecting on some rules or guidelines to manage state defaults ('sovereign defaults' in the jargon). The Fund published a number of documents and organised some conferences and seminars on a 'Sovereign Debt Restructuring Mechanism' (SDRM). However, there was a very negative reaction from all the members of the organisation. They feared that the elaboration of procedures to manage the default of states would have constituted a reminder for the financial community of the existence of precisely such a risk, with repercussions on interest rate levels required to sell government securities. In addition, most countries were unhappy that under the proposed mechanism the sovereign concerned and its creditors would be subject to decisions taken by the IMF or by the International Court of Arbitration of the International Chamber of Commerce.

Recently the organisation started working on this issue again, but limiting itself to the so-called contractual approach, i.e. the improvement in the legal clauses inserted in the legislation on the issuing of public debt: the so-called Collective Action Clauses (CACs). In September of last year, the IMF published a report[174] on how to strengthen some rules that are important for public debt restructuring. Obviously the IMF is trying to develop a project that is less ambitious than that previously conceived and for which it could obtain the agreement of the member states. For example, CACs rely on the consent between the

[173] Treaty on the Functioning of the European Union, article 125, paragraph 1: "The Union shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project. A Member State shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project."

[174] IMF, 2014.

sovereign debtor and its creditors[175]. In addition, the European Union has also agreed to introduce reinforced Collective Action Clauses in government bonds issued after 1 January 2013.[176] However, a number of commentators consider that these contractual provisions do not provide an adequate answer to this policy issue.[177]

At the same time, in most countries public opinion sees the default of a state as a very negative development that should be avoided at all costs. When the Greek crisis emerged, in many countries, and certainly in southern Europe, the prevailing mood was that something had to be done to help the country; that the country had to be "rescued", implying that a default had to be avoided. Very few politicians expressed the view that it might have been in the interest of the Greek population to engineer a restructuring of its public debt. This is understandable as it would be irresponsible for people in a position of authority to advocate the default of a given country since this might actually precipitate a crisis in the public finances of the country in question or indeed aggravate it. Nevertheless, this simultaneously engendered the widespread public belief that helping the country to avoid a default was the only way to help its people and therefore the only decent course of action available to its partners.

The severity of the Greek crisis led to a renewed interest in the matter of sovereign defaults. Recently, various economists and commentators, including Joseph Stiglitz[178], have taken positions in favour of the adoption of state default procedures. Proposals that go somewhat in this direction have also been put forward by Jens Weidmann, President of the Bundesbank[179] and, more recently, by the German finance Minister Wolfgang Schäuble.[180] Other economists remain sceptical about putting forward arguments that cannot be dismissed very lightly[181]; most of the arguments put forward by the ECB in 2010 (see section 4.1) maintain their validity. It is indeed likely that the introduction of a formal insolvency regime would lead to an increase in public debt interest rates and that this increase would probably be more pronounced in countries with fragile public finance positions and poor growth prospects. In turn, the higher interest rates on public debt will spill over to the private economy, thus further depressing economic growth. The pre-2009 situation with the near-disappearance of interest rate differentials was certainly not healthy; on the other hand, too high differentials also constitute an obstacle to the conducting of monetary policy (this was one of the reasons that led to the launching of the central bank's SMP operations).

The probability (or risk) of a debt restructuring is also linked to the effectiveness of economic policy coordination. An argument sometimes advanced is that the risk of a default might constitute a more powerful incentive for governments to follow a cautious budgetary policy. Reminding everybody that countries might default would induce electors and governments

175 For the implications of the CACs and an explanation of how the euro-area countries finally decided to introduce them in their bonds many years after the idea was initially floated see Hofmann 2014a.

176 Article 12, paragraph 2 of the ESM Treaty reads: "Collective action clauses shall be included, as of 1 January 2013, in all new euro area government securities, with maturity above one year, in a way which ensures that their legal impact is identical."

177 See, for instance, Leipold 2011a.

178 See Stiglitz et al 2015a.

179 Weidmann 2015a and Weidmann 2015b.

180 Handelsblatt 2015a.

181 For instance, Lindner 2015a.

to run fewer risks. Economic policy coordination has been reinforced after the beginning of the crisis through the introduction of new procedures (e.g. European semester, Country specific economic policy recommendations) and renewed commitments by all governments to take them seriously. However, it is doubtful that much has changed. In fact, a Brussels think tank, Bruegel, has recently published a paper showing that the degree of respect for the economic policy recommendations issued by the European Union has actually decreased since 2011.[182]

Presently, the position of the European Union and the euro-area countries is rather inconsistent. The restructuring of the Greek public debt in 2012 was the largest operation of its kind ever carried out (bonds were cancelled for an amount equal to two thirds of the country's GDP). Yet, when the decision was taken, the other euro-area countries solemnly reaffirmed "their inflexible determination to honour fully their own individual sovereign signature"[183]. The no bail-out clause is still in the Treaty, which indicates that defaults are possible. Yet the setting up of the ESM is a sign of the willingness of its members to help each other in times of need. On the other hand, the provision of the ESM Treaty that makes the granting of financial assistance dependent on the debt of the recipient country having been considered 'sustainable' (article 13, paragraph 1) opens the door to new restructuring decisions[184]. In addition, article 12 of the same Treaty mandated the insertion of Collective Action Clauses in all new government bonds, which are designed to facilitate debt restructuring operations.[185]

The matter was also recently discussed by the United Nations. On 10 September 2015 the General Assembly approved a resolution on 'Basic Principles on Sovereign Debt Restructuring' (Resolution A69/319). This resolution, however, is based on different concerns and covers slightly different ground. Its opening statement reaffirms that "A Sovereign State has the right, in the exercise of its discretion, to design its macroeconomic policy, including restructuring its sovereign debt, which should not be frustrated or impeded by any abusive measure". The main concern of this resolution is not to lay down procedures to be followed in the case of a restructuring, but to safeguard the independence of each country's policy making as much as possible. The resolution was adopted with the United States, Canada and Japan voting against it and with the European Union countries abstaining.[186]

Summing up. A contributing factor to the public finance crisis in the euro-area was the fact that investors and market participants did not actually believe the no bail-out commitment of the euro-area, notwithstanding it being enshrined in the Treaties. This led to unrealistically low differences in the interest rates paid by the various euro-area governments, an excess of investment in risky bonds, a lack of market pressure on the profligate countries and a sudden

182 Darvas et al. 2015b.

183 Eurogroup, 2011a

184 The "whereas" n° 12 of the ESM Treaty reads "In accordance with IMF practice, in exceptional cases an adequate and proportionate form of private sector involvement shall be considered in cases where stability support is provided accompanied by conditionality in the form of a macro-economic adjustment programme".

185 One of the aims of the new CACs is to address the problem of the holdouts who may try to buy a blocking minority in a given bond series. Those adopted by the euro-area foresee an aggregate voting threshold of 75 per cent across all bonds covered by the restructuring.

186 The reasons for the abstention of the European Union countries are explained in a Council of the EU document (11705/15, ECOFIN 688, UEM 342, ONU 106) of 7 September 2015.

reversal of the situation as soon as the first difficulties appeared. Experience has shown that it is difficult to draw the rules of the game as you go along. Any decision is seen as applying to a given country, thus giving rise to resentment. There appears to be a rather strong case for defining some restructuring procedures during relatively quiet times. These rules would then be applied later, during a crisis, and would help to reduce the emotional implications of what will always remain an unpleasant occurrence.

6. Conclusions

A detailed look at the history of the financial operations executed between May 2010 and the end of 2015 for the purpose of supporting Greece reveals a number of important elements.

The size of the intervention

The exceptional size of the interventions is, very often, not correctly appreciated. Greece is a relatively small state, but the interventions have been of an extraordinary size. In the history of the industrialised world a rescue operation of these dimensions has never been witnessed: with the third economic adjustment programme the interventions will have reached the €300 billion cap of concessionary loans (€302 billion gross, €278 billion net of the reimbursements to the IMF), a figure equal to 170 per cent of the Greek GDP in 2015. The loans that the IMF has extended to Greece are the largest ever granted by this organisation (to the point of provoking strong criticism from many emerging country members of the organisation).[187]

Reimbursement or cancellation?

Most commentators on the Greek crisis still appear to be influenced by the initial decision to help Greece reimburse its government bonds. Although it is true that initially it was decided to help Greece avoid a default, later the creditors organised a major restructuring of the Greek public debt that was still on the market, in addition to a very significant restructuring of the country's debt *vis-à-vis* the euro-area countries. The measures taken in 2012, even if much more significant in quantitative terms, do not appear to have had the same impact on public opinion.

Less than 30 per cent of the Greek Government bonds that were on the market in May 2010 have been fully reimbursed. Slightly more than half have been withdrawn against the payment of a (practically cash) compensation equal to around one quarter of the nominal value of the bonds. Around 18 per cent of the Greek Government bonds are still in circulation, but with longer maturities and lower interest rates. Between May 2010 and the end of September 2015 Greek Government bonds worth around €263 billion were withdrawn against the payment of some €136.5 billion in short-term EFSF bonds.

The two restructuring operations of 2012 (the forced exchange in March and the debt buy-back in December) have been very significant both in terms of the amount of debt cancelled and the 'toughness' of the conditions imposed (a cut of around 64 per cent as a result of the combined effect of the two operations). They enabled the cancellation of Greek Government bonds that were on the market for an amount equal to €127 billion (two thirds of the Greek GDP of the year the operation was conducted); this was the largest operation of this type ever completed.

[187] The minutes of the IMF Board meeting when the 2010 loan to Greece was discussed and adopted (IMF 2010a) indicate that "While supporting the program, several non-European Executive Directors raised numerous criticisms".

Substantial changes in the financial conditions attached to the loans

Initially, the maturities and the interest rates set for the loans from the euro-area countries were established on the basis of those applied by the IMF, with the interest rates becoming even higher after the third year. However, it was soon recognised that these conditions were both unjustified and unrealistic and were consequently softened considerably, resulting in a *de facto* significant restructuring of the Greek debt towards the euro-area countries. The lengthening of the maturities to beyond thirty years and the draconian reduction in the interest rates have provoked a reduction of the effective value (net present value) of the Greek debt towards its euro-area partners to around half its nominal value. The public debt interest burden for Greece is smaller than that of many other countries with much better public finance positions. The payment of interest on roughly half of the Greek debt towards the euro-area countries has been deferred to December 2022. The repayment of the principal debt will start in 2020 and extends to 2059.

Use of the financial support

Slightly less than half of the total financial support extended to Greece will be used for interventions on the debt. The other half of the financial support will be used to finance expenditure that the Greek state could not finance on the market. It is not correct to characterise the euro-area and IMF intervention as essentially an intervention on the Greek public debt.

The share of the financial support that will go to private bondholders will be just above one third of the total. The maximum amount of financial support that will have gone to the euro-area banks will be around 17 or 22 per cent, depending on whether the analysis takes into account all three programmes (former figure) or only the first two (latter figure). To state that "the financial support money has essentially gone to the banks of the creditors" is a gross exaggeration without statistical support.

The fact that these two conclusions come as a surprise to many people is essentially due to the aforementioned fact that most people remember the initial decisions and do not seem to be aware of what was completed under the second and third economic adjustment programmes.

Impact of the restructuring of the Greek public debt in 2012

I believe that the uncertainties that existed in May 2010 about the possible consequences of an immediate restructuring of the Greek public debt were so great that the decision taken at the time is justifiable. In any case, it is far from obvious that a cut in 2010 would have provoked a larger reduction in the Greek public debt. However, the delay in organising the restructuring of the debt transferred the burden towards the resident bondholders (mainly Greek banks) as the non-resident ones had more time to continue reducing their exposure to Greece, as they had been doing since 2009.

Scope for further reductions in the Greek public debt

The intervention of the euro-area countries and the IMF has transformed the Greek public debt from private investors' debt into debt payable to governments or organisations that act

on behalf of governments. In this way the burden of the cost of these operations and/or the partial repayment of the principal has been placed on the shoulders of the taxpayers of, mostly, the euro-area countries. At the end of 2015, almost 80 per cent of the Greek public debt was held by the euro-area and the IMF, with the share of the euro-area accounting for more than 90 per cent of the total.

This implies that any further cut can only be in the debt towards the euro-area governments (and their taxpayers). A big political difficulty results from the fact that the burden of this debt has already been cut substantially through the lengthening of the maturities to around thirty years and the large reductions in the interest rates paid. However, this cut is, politically speaking, not very visible.

Policy decisions to be taken

Finally the euro-area will have to address a number of open policy issues. It will have to take a position on further cuts in the Greek public debt towards the euro-area countries. As just explained, any new cuts will come on top of those already granted, but which have gone largely unnoticed by a large part of the European public opinion.

The euro-area countries will also have to decide whether to introduce limits to the holding of government bonds by the commercial banks. The present situation has led to an unhealthy link between the financial health of a government and that of the financial system of the same country.

The governments of the euro-area will also have to reflect on how best to achieve the goal of similar access to credit throughout the monetary union while avoiding the excesses (the near-disappearance of the interest rate differentials between sovereign borrowers) that have been seen in the past.

Finally, the members of the euro-area will have to decide whether it would not be in their collective interest to agree with procedures for the restructuring of the public debt of one of their own countries, now that they seem to have accepted the principle and have created a precedent.

Some institutional and political considerations

It is true that the decisions concerning the rescue of Greece have taken time, been partially contradictory and have necessitated an incredible number of discussions.[188] Enrico Letta, the former Italian Prime Minister, writes in his most recent book that, in order to move from the outbreak of the Greek crisis to the "whatever it takes" statement of Mario Draghi, more than thirty meetings of the European Council were required.[189] However, one has to recognise that the European leaders needed to take decisions on an issue made complicated not only by its

[188] Athanasios Orphanides (Orphanides, 2014) is very critical of many decisions taken during the euro-area crisis. He emphasises the role played by short-term political considerations in the crisis countries as well as in other euro-area countries in leading to wrong and inadequate decisions. The subtitle of his paper is "Politics over Economics".

[189] Letta 2015, page 15.

dimensions, but also by its characteristics: the crisis did not hit an isolated country, it hit a member state of a monetary union and any solution would have also had externalities for the countries outside the monetary union. This meant that many actors had to be involved in the decision-making process: the 16 (and later 19) members of the euro-area with their common central bank, and the other member states of the European Union together with the IMF. It should not be forgotten that the rescue of Ireland also witnessed contributions from the United Kingdom, Sweden and Denmark with bilateral loans totalling €4.8 billion[190].

More generally, the rescue of Greece has required financial decisions that are objectively difficult to understand and this in an area – finance – where emotions, especially after the 2008/2009 crisis, are running high. This partly explains the radicalisation of positions and the spreading of a considerable amount of wrong information.

The statement that the help for Greece has gone essentially to the banks and, in particular, to the banks of the creditors is just one example. Another is the fact that the interventions to recapitalise the Greek banks, which absorbed a not-negligible amount of the rescue funds, have often been presented as a 'gift' to the financial community when they are in fact crucial to guaranteeing the correct functioning of an economy (over the last few years, many other European Union countries have conducted operations of this type for huge amounts of money: just short of €2,000 billion[191]). The recent experience of the five-week closure of the Greek banks should have helped to clarify this point.

In addition, it should not be forgotten that in April 2010, when the Greek crisis became official, the European Union economy was recovering from the most severe recession since World War II: in 2009 real GDP had dropped by 4.5 percentage points. The average budget deficit of the euro-area had reached a level equal to 6.2 per cent of GDP, while the stock of gross government debt, boosted by the measures to support the banking system, had increased in one year by around 10 points of GDP. When they were suddenly confronted with the Greek crisis, the other members of the euro-area were still dealing with serious problems of their own.

Given the dimensions of the challenges, I do not believe that it is justified to take too critical an attitude. It is, however, a fact that the stubborn insistence on an intergovernmental decision-making process, at the expense of the community decision-making process that sees the European Commission interpreting the collective interest of the Union, has slowed down the pace of the decision-making, raised suspicions and caused resentment.

Nevertheless, it should not be forgotten that under the pressure of events, the European Union and the euro-area have made a number of institutional steps forward that would have been unthinkable ten years ago. The European Union now has a prototype of a European IMF, namely the ESM, which in the future could help to solve possible public finance crises of small and medium-sized European countries. The EFSF and ESM loans to Greece, totalling almost €150 billion at the end of 2015, represent a first large-scale application of the

[190] EFSF 2015, page 5. The contributions by the three countries were: United Kingdom €3.8 billion; Sweden €600 million, Denmark €400 billion.

[191] Adamczyk et al. 2015.

'Eurobonds' principle. Through these loans Greece has financed its public expenditure, as well as the restructuring and reimbursement of its debt, at the market conditions available to the whole of the euro-area countries. Greece is currently bearing the full market cost of these loans, substantially lower than what it would have had to pay if it had been able to raise this large amount on the market, while the other euro-area countries will not incur any costs, as long as the principal is fully repaid. The idea of 'Eurobonds' has been around for many years and very few people would have expected to see it implemented to such an extent. It is an open question, however, whether this first *de facto* application of the principle will constitute a precedent that will increase the chances of the mechanism being used in the future for other purposes. The likelihood that there will not be a full repayment of these loans suggests a negative answer, even if, technically, the system works as expected.

In addition, there has been a reinforcement of the coordination of economic policies mechanisms – albeit with dubious results – and the European Union has made significant steps towards a more efficient and common management of the European financial system. There still remains a lot to do, but it would be a mistake not to appreciate the importance of the progress made.

The Greek crisis has underlined the need to already start preparing for similar future situations and adopt rules and procedures that will simplify the decision-making process, rendering it less emotional. This is particularly true concerning the decisions on a possible restructuring of a country's public debt. To have obtained a larger cut of the Greek public debt in 2010, it would have been necessary to have had in place previously defined rules and, above all, it would have been necessary for public opinion to be prepared to accept such a possibility. To return to the opening point made in this paper, I find it particularly surprising that the criticism that too much money has gone to the banks very often originates from the same people who in 2010 requested an intervention "to save Greece", or in other words, an intervention to prevent a default.

It is my opinion that even more important is the remaining issue of understanding the reasons behind the implosion of the Greek economy, something no econometric model could have predicted. This was not the object of this paper, but fortunately a large amount of literature is now appearing on the subject.

7. Annexes

7.1 Annex 1: Allocating financial assistance by main categories of expenditure

This annex presents the methodological issues that arise in trying to identify the use that has been made of the financial assistance to Greece and the choices that have been made to address them. It also indicates the statistical sources that have been used.

The use that has been made of the large loans extended to Greece is one of the most hotly discussed issues. However, there are limits to the analysis that can be conducted as money is fungible and, whatever the justification for certain loans, if a country has more money to, say, pay interest on its debt, this means that it will also have more resources to pay pensions and salaries. If it receives money to help it, say, recapitalise its banks, it means that it will have more money to pay interest on its debt or to finance any other item of its expenditure.

A state may need money in excess of its fiscal receipts for essentially three main reasons:

a) To roll out or restructure its debt. To reimburse bonds and loans coming to maturity or to finance a restructuring of its public debt.
b) To finance its budget deficit (in the language of the national accounts, to finance "the net borrowing of its general government"), i.e. to finance the excess of its expenditure relative to its fiscal receipts irrespective of the nature of the expenditure: interest payments, public salaries, pensions, subsidies to firms, etc.
c) To conduct financial operations that do not affect the net position of its 'general government', but still lead to an increase of its gross public debt. This may happen when a state lends money to enterprises or banks or buys shares in these companies. In the case of Greece, significant amounts have been spent in this way in order to recapitalise the Greek banks.

However, even this three-way split ought to be reduced to just two basic categories: a) interventions on the debt, b) other state expenditure. In the following table a five-way split is presented in order to ease the comparison with other analyses and identify some specific items of expenditure that have attracted particular attention.

What constitutes debt?

In the specific case of the current Greek crisis, it is also necessary to explain what 'debt' means. The term should cover all the interventions dealing with the stock of €320 billion of medium- to long-term Greek Government bonds that were on the market when the crisis exploded in May 2010. This means identifying the money that has and is being spent in order to reimburse the bonds coming to maturity, the money that was paid to exchange some bonds in March 2012 and the sums that have been offered to buy back other bonds in December 2012.

The story of the operations on the Greek Government bonds is pretty straightforward (see Table 9 in the main text): full reimbursement until the end of February 2012; forced exchange of the vast majority of the bonds on the market in March 2012; and the offer to buy back

some bonds in December 2012. From 2012 onwards the reimbursements concerned only three types of Greek Government bonds:

a) The bonds that were not covered by the exchange operation as held by the European central bank and the central banks of some euro-area countries (in jargon: SMP and ANFA bonds; €56.2 billion in March 2012);
b) The bonds that were not tendered in during the restructuring operation (holdouts, €7.5 billion);
c) The long-term bonds issued in March 2012 and not sold back in December (€30.5 billion) and the five year bonds issued in April 2014 (€3 billion). This last group of bonds constitutes thus far the only addition to the stock of medium and long-term Greek Government bonds on the market.

In the European Commission and IMF documents, the reimbursements to this last organisation are sometimes listed in the Greek financing needs under the heading 'amortisation'. However, in an economic analysis of the type attempted when identifying the 'uses' of the assistance, these reimbursements are just reductions of the disbursements made in favour of Greece and should be detracted from the total of the gross disbursements; only the net disbursements matter. This is the convention that has been followed in this paper. When figures are given for both the gross and net reimbursements this has been explicitly indicated.

However, the tables on the Greek financing needs, especially those for the third programme, also list the reimbursement of a number of short-term debts, often for small amounts: 'unwinding of some repo operations', 'reimbursement of overdrafts with the Bank of Greece', 'reconstitution of SDR holdings', 'reconstitutions of cash balances in the Greek administration', 'reimbursement of commercial loans by state entities', etc. These reimbursements should not be considered as operations on the Greek public debt in the sense of answering the question of "what went to the bond holders and what financed Greek state expenditure?" These are just operations that defer the payment of Greek state expenditure by a few months. Not surprisingly, these operations have become statistically significant in the third programme as the Greek state started encountering liquidity problems in the second half of 2014 (when difficulties in the implementation of the programme became visible) and in the first months of 2015. No loan disbursements were made between August 2014 and the EFSM bridging loan of July 2015.

For the first and second programme the problem does not arise as the figures for the bond reimbursements are taken from the PDMA statistics, those on the restructuring operations are taken from the relevant official publications and the figures for Greek state expenditure are taken from the national accounts. For the third programme, the repayment of these short term loans (totalling €9.9 billion) has been allocated to 'Greek state expenditure'.

The statistical sources

The first source of information with regard to what has been paid in each of these three expenditure categories are the debt statistics (in the case of Greece, the figures on the stock of medium- to long-term Greek Government bonds in circulation at a given date, published on a quarterly basis in the Bulletins of the Greek Public Debt Management Agency;

PDMA). For the other two categories of expenditure the official source of information is the national accounts figures for the gross debt of the country ('gross debt of general government'). The variation in the stock of debt between two dates is equal to the expenditure that the country has made for its budget deficits and its financial operations (unless there are specific operations on the stock of debt as was the case in Greece in 2012). The national accounts figures for the budget deficit ('net borrowing requirement of general government') enable to further distinguish between this type of expenditure and the financial operations previously mentioned.

Concerning the first two economic adjustment programmes for Greece, the debt statistics and the national accounts provide an almost complete picture. For the third adjustment programme, it is necessary to base the analysis on the 'financing needs' that are included in the official programme documents. In any case, the information concerning the 'financing needs' conveys useful additional information for each programme as it is much more detailed than the national accounts. However, the 'financing needs' tables constitute forecasts and often these forecasts are adapted in later versions of the documents. Nevertheless, this is not always the case as sometimes the presentation of the tables and their level of detail changes from document to document.

Table A1: Figures at the basis of Tables 6, 7 and 8; actual expenditure (€ billion)

Outturn for the first programme; Near outturn for the second; Forecasts for the third	Financing needs		
	1st Programme May 2010 / Dec. 2011	2nd Programme 2012 / 30.6.2015	3rd Programme Aug. 2015/ Aug.2018
1. Reimbursement of bonds coming to maturity (private creditors)	58.0	3.2	3.8
2. Reimbursement of bonds coming to maturity (SMP, ANFA)		27.6	13.4
3. Restructuring operations (PSI and "buy back")		41.0	
4. Bank recapitalisation		37.3	25.0
5. Greek state expenditure	45.0	32.7	39.1
6. Total identified financing needs	103.0	141.8	81.3
7. Net loan disbursements	73.0	129.8	75.6
8. Difference (6 minus 8), i.e. other sources of financing	30.0	12.0	5.7

An additional difficulty is presented by the fact that the total of the 'financing needs' is always higher than the loans extended as in each period it was expected that the country would enjoy some additional forms of financing that would complement the official loans. It is therefore not possible to directly compute the size of a given type of expenditure as a percentage of the loans extended; the sum of the shares would exceed 100 per cent. In Tables 6 and 7, this problem has been addressed by proportionally adjusting each item of expenditure to obtain an expenditure total equal to the net loans actually disbursed. The calculations are presented in Table A2.

Table A1 presents the figures that have been identified and which in turn enabled the production of Tables 6 and 7 (financial support allocation by big expenditure categories) and Table 8 (maximum theoretical amounts of financial assistance that may have gone to private creditors, to banks, to foreign banks and to euro-area banks). The first three lines refer to the management of the Greek public debt; the fourth line refers to a specific amount of expenditure (bank recapitalisation) and the fifth covers all other Greek state expenditure (leading to a budget deficit or financial operations increasing the gross debt over and above the impact of the deficit).

Reimbursement of Greek Government bonds coming to maturity

The figure of €58.0 billion for the reimbursement of bonds coming to maturity under the first economic adjustment programme is provided by the PDMA to Miranda Xafa and quoted by her in Xafa, 2014. Unfortunately, the PDMA only publishes figures from which the amount of Greek Government bonds in circulation can be derived (Quarterly Bulletins) from the beginning of 2011, and it is not possible to buttress the €58.0 billion figure with published official information. The figure of €58.0 billion actually covers the reimbursements made between May 2010 and the end of February 2012, but it can be taken as representative of the bond reimbursements made under the first programme, in the light of the fact that no loan disbursements were made to Greece between December 2011 and March 2012 (for the first debt restructuring operation). This figure must include the reimbursement of SMP and ANFA bonds (i.e. bonds held by the ECB and other euro-area central banks), but in the absence of reliable information on this point, the figure has been allocated entirely to 'private' bondholders.

The figure for the second programme (3.2 + 27.6 = €30.8 billion) is taken from the PDMA bulletins and is made up of the amount of bonds fully reimbursed in 2012 (€8.1 billion), outside the two restructuring operations, and of the variation in the stock of Greek Government debt between the end of 2012 and the end of June 2015 (PDMA Bulletins N° 68 and 78) increased by the €3 billion of five-year bonds issued in April 2014. The overall amount has been allocated proportionally between private and official creditors on the basis of their holdings of bonds at the beginning of the restructuring operations and taking into account the fact that neither the bonds issued in March 2012, nor those issued in April 2014 could come to maturity during this economic adjustment programme. Those issued in March 2012 had maturities of between ten and thirty years, while those of April 2014 have a five-year maturity. For the trend of Greek Government bonds see Table 5 in the main text.

The Commission document of 2014 (Fourth Review of April 2014) indicates a higher figure for the reimbursement of bonds until the end of 2014: €38.3 billion for the three years 2012, 2013 and 2014 (no reimbursements have been made in the first six months of 2015), a figure that is €7.5 billion higher than the actual one. However, the Commission figure of April 2014 was only a forecast made through the programme.

The figure for the amortisation of bonds held by private creditors under the third programme (€3.8 billion) refers to the remaining bonds held by the holdouts. The figure of €13.4 billion for the SMP and ANFA bonds (second line) includes the bonds to be reimbursed over the

third programme (€9.2 billion) as well as the €4.2 billion of SMP bonds reimbursed in July 2015 thanks to the EFSM bridging loan.

€2 billion of reimbursements to the IMF, €4.2 billion to the ECB and €0.8 billion to the Bank of Greece were made possible by the EFMS bridging loan granted in July 2015 (€7.0 billion plus €0.16 billion as a complement to the guarantee mechanism for the non-euro-area member states) and reimbursed in August 2015 thanks to the disbursement of the first tranche of the new ESM loan. The payments made with the bridging loan were treated as if made directly out of the ESM disbursements under the third programme. The reimbursements to the IMF have been deducted from the gross figure, the €4.2 billion of SMP bonds held by the ECB have been included in the figure of €13.4 billion of reimbursements to official bondholders as just explained and the roughly €0.8 of reimbursement to the Bank of Greece has been included in the €9.9 billion considered 'Greek state expenditure' for the reasons previously explained.

The document entitled 'Financing needs' (European Commission, 2015c) also includes €4.2 billion of loan reimbursement to the private sector, €3.5 billion of winding down of *repo* operations and the debt reimbursement for €2.2 billion to the Bank of Greece (a total of €9.9 billion). These figures have not been included in the first two lines as they do not refer to the reimbursement of the Greek public debt on the market at the time of the outbreak of the crisis, but instead to short-term debt incurred very recently (mostly in the first months of 2015). Therefore they constitute a form of Greek state expenditure financing, perhaps probably incurred during the second adjustment programme, and not yet recorded. This amount, €9.9 billion, has been added to the financing of Greek state expenditure under the third programme (it is included in the figure of €22.5 explained under the heading 'Greek state expenditure', third programme).

Debt restructuring operations of 2012 (PSI and 'buy back')

The debt restructuring operations of 2012 cost €29.7 billion (the forced debt exchange of March 2012) and €11.3 billion (the 'debt buy-back' of December) for a total of €41.0 billion. Interest on the accrued debt was also paid in March, but it represents current expenditure included in the general government accounts and already taken into account in line five (Greek state expenditure).

Bank recapitalisation operations

The bank recapitalisation figure under the second programme (€37.3 billion) is the sum of the €41 billion disbursed in 2012, plus the €7.2 billion disbursed in 2013, minus the €10.9 billion unused and returned to the EFSF in February 2015. The figure for the third programme is taken from European Commission, 2015c. There is no guarantee that the amounts transferred to Greece for this type of expenditure will correspond exactly to the effective expenditure. Nevertheless, the actual expenditure for these interventions is certainly captured by the national accounts, either in the budget deficit figures or in the financial operations figures that fall outside of the concept of 'net borrowing', but still impact the gross debt level of Greece's 'general government'.

In fact, it would have been more correct not to detail this item of expenditure here and simply take under 'Greek state expenditure', the full figure of the variation in the level of public debt. It is kept separate given that so many other commentators treat this item separately. Its separate inclusion, however, does not affect the robustness of the overall figures, given that from the national accounts figure for 'Greek state expenditure' inserted in line five has been detracted the amount mentioned here. Any imprecision in the €37.3 billion figure mentioned here and detracted from line five will be compensated by the remaining amount. In section 4.4 of the main text, it is explained why the cost of the Greek banks recapitalisation directly due to the cut in the Greek public debt can be estimated as approximately €17 billion.

Greek state expenditure (deficit financing)

The figure for the first adjustment programme, €45 billion, is calculated as the difference between the estimate of the Greek gross public debt level at the end of April 2010, presented in section 2.3, and its official level at the end of 2011. This figure includes approximately two thirds of the 2010 deficit (€25.3 billion) and the full deficit of 2011 (€21.2 billion). The remaining €6.8 billion are represented by financial operations that fall outside of the concept of 'net borrowing of general government', but that still impact the level of public debt.

The forecasts contained in the Commission documents are not very different. The 2011 Third Review indicates an estimate of €14.8 billion as the government deficit for the period May 2010 to end 2010 (broadly two thirds of the figure for the whole of 2010 as it appears in the national accounts: €25.3 billion). The estimate for the government deficit of 2011 (€21.0 billion) is spot-on and is taken from the Third Review for the first two quarters of 2011 and the Fourth Review for the last two quarters. The total explicitly identified for the 'budget deficit' under the first programme is therefore €35.8 billion. The rest is justified in the documents as due to: 'Public enterprises', 'Adjustment to cash', 'Settlement of arrears' and creation of a 'Cash buffer'. These items explain the remaining increase in the public debt, equal to €6.8 billion, which appears in the national accounts.

The figure for the second adjustment programme was more difficult to calculate. During the three years 2012, 2013 and 2014 the sum of the budget deficits was equal to €45.6 billion; this figure already includes some of the bank recapitalisation costs. During this period the Greek government also conducted financial operations worth €24.4 billion, mainly to recapitalise its banks.[192] The sum of these two figures is €70.0 billion. However, in order to avoid double counting, this figure must be reduced by the €37.3 billion already taken into account in line four. Therefore this gives an amount of €32.7 billion in line five for the period 2012-2014.

To this amount should be added the first six months of 2015. However, I prefer not to include anything as the budget deficit of this period has been financed by unconventional methods and the figures for the third programme contain, under 'amortisation' the reimbursement of short-term debt, which is considered, for an amount of €9.9 billion, as 'Greek state expenditure' (as already explained). Including anything here for 2015 would

[192] The figure for the amount of 'financial transactions' impacting the gross debt levels is taken from Eurostat, *Reporting of Government Deficits and Debt Levels*, Greece;
http://ec.europa.eu/eurostat/documents/1015035/7039947/EL-2015-10.pdf.

probably lead to double counting. The €9.9 billion of reimbursement of short-term debt that was transferred to 'state expenditure' essentially represents the expenditure made in 2015. Once the national accounts figures for 2015 will have been published, it will be possible to refine further these estimates.

The documentation for the second programme (Fourth Review April 2014, pages 71/72) states a figure of €21.9 billion for 'deficit financing' plus €13 billion for '*other* government cash needs' (which includes €2.3 billion for the ESM capital). The sum of these two amounts (€34.9 billion) is not very different from the national accounts figure that I have used (€32.7 billion) and it must include something for 2015.

The Greek state expenditure figure for the third programme (€39.1 billion) is made up of the foreseen interest payments, €16.6 billion, and €22.5 billion for various other items ('payment of arrears', 'unwinding of repo operations', 'reconstitution of cash balances', 'replenishment of SDR holdings', 'repayment of private sector loans', 'repayment of a Bank of Greece loan'. A part of these items (€9.9 billion) constitutes the aforementioned state expenditure incurred in the past (largely in 2015) and for the rest represent financial operations. The figure of €39.1 billion benefits from a reduction of €2.0 billion due to the expected primary surplus during the programme.

Financing needs

The figures for the financing needs identified in the table are obviously the sum of the first five lines. However, it is useful to compare them with the figures contained in the official documents published at the time. For the first programme, the documents state a total figure of €93.8 billion (€35.8 for 2010 from annex 4, page 75 of the Third Review of February 2011 and €58.0 billion for 2011 from the same annex for the first two quarters and from the Fourth Review for the third and fourth quarter). The fact that the actual financing needs were significantly higher than anticipated (more than €9 billion) is certainly a reflection of the large forecasting errors initially made.

The Fourth Review of April 2014 contained a total figure for the financing needs for the second programme of €157.7 billion for the period 2012-2014 (net of the IMF reimbursements and the restitution of €10.9 billion of bonds not effectively needed for the recapitalisation of the banks). This figure is higher than the actual one indicated in this annex. The difference is approximately €16 billion. €5 billion come from higher than expected Greek expenditure needs and the other €11 billion are due to a higher bond reimbursement figure (already commented upon under 'Reimbursement of bonds coming to maturity') and the expectation of the reimbursement of other 'loans', which apparently did not materialise. The differences between the forecasts contained in the official IMF and European Commission documents and the outturn embodied in the national accounts explain some of the differences between the estimates produced by other commentators and the ones presented in the next annex. Most authors seem to have worked mostly with the official IMF and Commission programme documents; no explicit reference to the debt statistics or the national accounts figures is made in the four contributions examined in Annex 2.

The documents for the third economic adjustment programme indicate financing needs net of privatisation receipts equal to €85.5 billion, rounded up to €86 billion in the main documents.

Net disbursements

The figures for the first two programmes are well known and are presented in Table 2. The figure for the third programme presented here is taken from European Commission, 2015c, but it excludes the reimbursements to the IMF (including €2.0 billion reimbursed with the proceeds of the ESFM bridging loan). This leads to a net figure of €75.6 billion of disbursements under the third programme (instead of the usually referred to gross figure of €86 billion).

Other financing sources

The 2011 Third Review indicates as 'other sources of financing' under the first programme for 2010/2011 more than €40 billion of 'Gross government debt issuance'! The documentation for the second programme indicates an additional €14.5 billion of financing from 'Market financing', 'Privatisation receipts' and 'SMP, Anfa profits'. The only other source of financing foreseen under the third programme is represented by the 'privatisation receipts' (€6.2 billion). The 'other financing sources' identified here are €30 billion for the first programme, €12.0 billion for the second and €5.7 billion for the third. The difference between this item and the 'privatisation proceeds' for €6.2 billion mentioned in the official documents is due to the fact that the sum of the financing needs identified by the Eurogroup totals €85.5 billion, while the figure mentioned in the documents for the maximum amount of disbursements (and used here) is €86 billion.

Results of the exercise

Table A2 presents the adjustment of the actual amounts of expenditure (the figures of Table A1) to the net loan disbursements total. The adjusted figures are those presented in Table 6 of the main text.

Table A2 – Adjustment of actual figures to net disbursements total

	1st Prog.		2nd Prog.		3rd Prog.	
	Actual	Adjust.	Actual	Adjust.	Forecast	Adjust.
1. Reimbursement of bonds (private bondholders)	58.0	41.1	3.2	2.9	3.8	3.5
2. Reimbursement of bonds (official bondholders)			27.6	25.3	13.4	12.5
3. Debt restructuring operations			41.0	37.5		
4. Greek banks recapitalisation			37.3	34.1	25.0	23.2
5. Greek state expenditure	45	31.9	32.7	29.9	39.1	36.4
6. Total (1 to 5)	103.0	73.0	141.8	129.8	81.3	75.6
7. Net disbursements under the programme		73.0		129.8		75.6
8. Gap between actual expenditure and disbursements	30.0		12.0		5.7	

An important observation: the goal of these calculations is to establish the relative shares of two types of expenditure ('Debt' – 'Other state expenditure'). Exactly the same result is

obtained if one calculates the percentages of each specific expenditure item in the actual expenditure total. This is, for instance, the approach followed by Mouzakis in his chart. The approach followed here, which in arithmetic terms yields exactly the same results, visually gives a more satisfying answer to the question 'shares of the extended assistance'. It recognises the fact that the identified expenditure was financed by the IMF and euro-area countries loans, but also by other forms of financing. It is more correct in terms of the identification of the monetary values of each item.

What is certainly not correct is the approach followed by Bortz. He declares that he is puzzled by the fact that the sum of the expenditure items identified by Yanis Mouzakis comes to €254.4 billion, whereas the disbursements to Greece indicated in the Macropolis paper were only €227.6 billion (in fact the actual figure was €215.9 billion gross and €202.8 billion net of the reimbursements to the IMF). He 'solves' this difficulty by producing a table where he takes the lower figure (€227.6 billion, the total of the financial assistance) and deducts from it the actual expenditure for the 'debt'. He then concludes that the remaining 'difference' must represent the amount that has helped the Greek state to finance its expenditure!

Table A3 regroups the adjusted expenditure items in 'interventions on the debt' and 'other Greek state expenditure'. Its three most important lines are presented in Table 7 of the main text.

Table A3 – Split 'Debt' / 'Other Greek state expenditure'

(€ billion)	First two programmes		Three programmes	
Total net loan disbursements	**202.8**	**100.0 %**	**278.4**	**100.0 %**
Reimbursement of bonds (private)	44.0		47.5	
Reimbursement of bonds (official)	25.3		37.8	
Debt restructuring operations	37.5		37.5	
Public debt-related expenditure	**106.8**	**52.7 %**	**122.8**	**44.1 %**
Bank recapitalisation	34.1		57.3	
Budget financing	61.9		98.3	
Other Greek state expenditure	**96.0**	**47.3 %**	**155.6**	**55.9 %**

Table A4 on the next page presents the figures and the calculations at the basis of Table 8 in the main text ('maximum ceilings' of the financial resources put at the disposal of Greece that may have gone to certain groups of bondholders). The first three lines present the basic figures used in the calculations, i.e. the total amounts spent to reimburse bonds held by private bondholders, the same figure for the bonds held by official bondholders and the cost of the two debt restructuring operations of 2012. The sum of these amounts is then put in relation to the total figure for the net disbursements of the official loans to Greece. This approach is not correct, as it has been explained above, as the sum of the identified items of expenditure exceeds the figure of the net disbursement. But it has been used to calculate the figures under the most unfavourable assumptions to stress the character of 'maximum theoretical ceilings' of the percentages calculated.

Table A4 Calculation of the 'maximum ceilings' of the financial resources that may have gone to certain groups of bondholders		
Basic figures (€ billion)	**First two programmes**	**Three programmes**
Reimbursement of bonds held by private bondholders	61.2	65.0
Reimbursement of bonds held by private bondholders	27.6	41.0
Debt restructuring operations	41.0	41.0
Total of the three economic adjustment programmes (net disbursements: €278.4 billion)		
	Absolute figures	Percentage of the net disbursements
a) Total intervention on bonds, including debt restructuring	147.0	52.8 %
Without debt restructuring	106.0	38.1 %
b) Total intervention on bonds held by private bondholders	106.0	38.1 %
Without debt restructuring	65.0	23.3 %
c) Interventions on bonds held by the banks (90 % of 'b')	95.4	34.3 %
Without debt restructuring	58.5	21.0 %
d) Interventions on bonds held by foreign banks (65 % of 'c')	62.0	22.3 %
Without debt restructuring	38.0	13.7 %
e) Intervention on bonds held by euro-area banks (75% of 'd')	46.5	16.7 %
Without debt restructuring	28.5	10.2 %
First two economic adjustment programmes (net disbursements: €202.8 billion)		
	Absolute figures	Percentage of the net disbursements
a) Total intervention on bonds, including debt restructuring	129.8	64.0 %
Without debt restructuring	88.8	43.8 %
b) Total intervention on bonds held by private bondholders	102.2	50.4 %
Without debt restructuring	61.2	30.2 %
c) Interventions on bonds held by the banks (90 % of 'b')	92.0	45.4 %
Without debt restructuring	55.1	27.2 %
d) Interventions on bonds held by foreign banks (65 % of 'c')	59.8	29.5 %
Without debt restructuring	35.8	17.7 %
e) Intervention on bonds held by euro-area banks (75% of 'd')	44.8	22.1 %
Without debt restructuring	26.9	13.2 %

7.2 Annex 2: Comparisons with other estimates

This annex shall comment on the estimates presented in some other contributions. The first is the paper published by ATTAC Austria, in 2013; the second is an article published in January 2015 by Yanis Mouzakis; the third is the report of the Truth Committee set up by the Greek Parliament and published in June 2015, and the last is a recent paper by an Argentinean researcher named Pablo G. Bortz, published in November 2015.

ATTAC Austria, June 2013

In June 2013, ATTAC Austria published a piece on its website where it stated that 77 per cent of the help extended to Greece went to the 'financial sector'. Their figures are slightly different from those mentioned in this paper, but are not as wide of the mark as those of other contributions. However, their calculations suffer from some doubtful choices. First of all, they lump together all the bondholders, private and public (after all their title mentions money having gone to the financial sector). They follow the same logic and treat the money spent to organise the cancellation of a large share of the Greek public debt in the same way as that spent to reimburse the bonds coming to maturity (two choices that I can understand). However, they include in the amount of money having gone to the financial sector the money spent for the recapitalisation of the banks (a choice that I cannot accept).[193]

However, if their figure for bank recapitalisation is reallocated, their conclusions are similar to those presented here: €101 billion used for the Greek debt, out of a disbursements total – that is, until June 2013 – from the IMF and the euro-area that they indicate as being €207 billion. Therefore, their piece argues that the money spent on the Greek public debt was 49 per cent of the total financial support extended, a figure not very different from those presented in this paper.

Yanis Mouzakis, January 2015

Yanis Mouzakis writes at the beginning of 2015, when the second adjustment programme was coming to its end and the negotiations for its extension or for a new programme had just started. According to Mr Mouzakis, Greece had already received loans for €226.7 billion. This figure is correct, as at the time Mr Mouzakis wrote his article the €10.9 billion of unused EFSF had not yet been returned by the HFSF. This only happened in February 2015.

Mr Mouzakis provides a chart that purports to show "*where the money went*" and that he claims to have pieced together from the Commission and IMF documents. However, this chart allocates a total of €254.4 billion. The purpose of this chart is to counter what Mr Mouzakis claims to be a misperception: "There seems to be a general misconception that feeds a misleading narrative in which the loans were used to keep the Greek state afloat, maintain its basic operations and pay salaries of doctors, teachers and policemen"[194].

[193] ATTAC Austria 2013. Their figures are not too different from those that appear in the official documents, but they use an unrealistically high figure for the bank recapitalisation (€58.2 billion) and have a shortfall of about €10 billion in their expenditure allocation.

[194] Mouzakis, 2015; page 2.

Yet his own figures show that of the total (using his own figures) €245.3 billion (net of the figure of IMF reimbursements that he uses), €127.2 billion, equal to 51.9 per cent of the total, was used to reimburse or restructure the Greek public debt. Even if he includes in this amount €4.9 billion of interest payments, which constitute normal Greek state expenditure. The remaining €118.1 billion, equal to 48.1 per cent of the total, is standard state expenditure: interventions to save the Greek banks; interest payments; Greece's participation in the capital of the ESM; 'Other Government Cash Needs' and 'Primary Deficit'. His own figures, rightly regrouped, confirm the broad split "half for the debt, half for Greek state expenditure" that emerges from the elements presented in this paper.

Mr Mouzakis also interprets other figures in a very original way. On page 2, he writes that: "From 2013 onwards, revenues exceeded expenses and no financing was needed to cover state operations". He seems to confuse the primary balance (i.e. net of interest payments) with the actual budget deficits. The national accounts show that in 2013 there was still a deficit equal to €22.4 billion, followed by a €6.3 billion deficit in 2014 and a €8.0 billion deficit in 2015. These deficits (in addition to the cumulated deficits of €63.3 billion for the years 2010, 2011 and 2012) could not have been possible without the support of the IMF and the euro-area countries. Mr Mouzakis also complains that no relief was offered on the Greek debt towards the euro-area countries. Yet his article was written in January 2015, more than two years after the extension of the maturities of the loans to over thirty years, the reduction of the interest rates to around one per cent and the deferral to December 2022 of the interest payment on about half of the Greek debt towards the euro-area.

Truth Committee of the Greek Parliament, June 2015

In 2015, the Hellenic parliament set up a Committee on Greek Public Debt ('Public Debt Truth Committee'). In June 2015, this committee published a report indicating that only 10.1 per cent of the financial support extended to the country under the two first programmes was used to finance the budget balance[195].

Table 3.1 on page 22 of the Report indicates how the financial support to Greece has been used (same goal as Table 7 of this paper). The table has six lines with the following data (€ billion): "Official Funding Received: 243.2 (100%); Amortization (exc. short term debt): 112.5 (46.3%); Bank recapitalization: 48.2 (19.8%); PSI related costs: 34.5 (14.2%); Other: 23.4 (9.6%); Budget Balance: 24.6 (10.1%)".

Unfortunately, the Report does not provide any information on the production of this table. There is a note that refers to a series of official documents (the same used in the present paper) as sources, but there is no information as to the actual figures used and to how they have been reassembled to arrive at the published results. It is therefore impossible to identify the origin of the very large differences between their results and my own. The following paragraphs contain some comments on the figures of the Truth Committee.

In June 2015, the total of net disbursements by the euro-area and the IMF was €202.8 billion (Table 2), rather than the €243.2 billion mentioned in the Truth Committee Report, which seems to have based its work on that of Mouzakis, but missing the distinction between actual

[195] Truth Committee, 2015a, page 22, Table 3.1.

disbursements and the sum of the identified items of actual expenditure.[196] The total amount of Greek Government bonds reimbursed between May 2010 and June 2015 was €88.8 billion[197]. It is difficult to find an explanation for the figure of €112.5 billion that appears in the Report.

All the estimates for the recapitalisation of the banks in 2012/2013 arrive at a figure of €37.2 billion (see the discussion of this point in section four) and not the €48.2 billion referred to in the report. Again they take the same figure used by Mouzakis, but by June 2015 €10.9 billion of this amount had been officially reimbursed to the EFSF. The operation took place in February, after the publication of Mr Mouzakis' article, but well before the Committee's report.

The total cost of the two restructuring operations in 2012 is one of the most solid figures available; €41.0 billion. But again different from the €34.5 billion mentioned in the report. Here they seem to have taken Mouzakis' figure for the March operation (which incorrectly also includes interest payments), but have forgotten the €11.3 billion of the December 'debt buy-back'. The rest of the expenditure (the two items in the report called 'Other' and 'Budget balance') totalled €77.7 billion (€45.0 billion plus €32.7 billion; see the table in Annex 1 rather than the €48.0 billion mentioned in the Truth Committee Report.

Pablo G. Bortz, November 2015

The primary aim of Mr Bortz's work is to refute the calculations and conclusions drawn by the chairman of the German IFO research institute who in 2015 published a paper, where he controversially included the Target 2 balances of the Eurosystem in the financial assistance extended to Greece.[198] In the latter part of his work[199], Mr Bortz republishes the graphic of Mr Mouzakis. As explained in Annex 1, he is puzzled by the gap shown by this chart between the sum of the 'uses' and the loans actually received by Greece. He claims to have proceeded to a further analysis of the figures on the basis of the Reviews published by both the European Commission and the IMF, and provides his own table where he presents a split in the total '*disbursements*' of €226.7 billion for the period 2010-2014.[200] In this table he makes one useful correction: he removes from the debt restructuring cost the €4.9 billion of interest payments incorrectly considered by Mouzakis and the Truth Committee. But in terms of the

196 The authors of the Report were confronted with a difficulty that also puzzled other commentators (for instance, Bortz 2015 and Mouzakis 2015): i.e. that the sum of the 'financing needs', namely the actual Greek state expenditure identified in the official documents, significantly exceeds the amounts actually lent to Greece because of the existence of other financing channels. I have addressed this problem through the proportional reallocation used in Table 6, which is explained in its footnotes and Annex 1. In the text of this page, I will give the figures that I believe to be correct for the items put forward by the Truth Committee. However, their sum adds up to €243 billion, against a net amount of loans received by Greece of approximately €203 billion.

197 Table 5 and Chart 1 show the amount of Greek Government bonds reimbursed at the end of September 2015: €95.5 billion. At the end of June 2015 this figure was €88.8 billion (see PDMA Bulletins n°78 and n°79).

198 Sinn, 2015.

199 Bortz, 2015.

200 Bortz, 2015, page 32, Table 4. However, the actual disbursements before the third programme were €215.9 billion (gross) and €202.8 billion (net of the reimbursements to the IMF); Mr Bortz appears to have missed the reimbursement of €10.9 billion worth of EFSF notes by the HFSF, the Greek agency tasked with the recapitalisation of the Greek banks. This operation was carried out in February 2015.

funds actually used for the benefit of Greece, he still arrives at a figure of only €47.8 billion, in other words, 21.1 per cent of the total.

However, Mr Bortz reaches this result through the methodological error previously explained in Annex 1. As he explicitly writes, he is puzzled by the fact that the sum of the expenditure items identified by Mouzakis is equal to €254.4 billion, whereas the actual disbursements are just €226.7 billion. He solves this conundrum by starting from the lower of the two figures (the one for the disbursements) and subtracting items that he does not consider part of Greek state expenditure: the reimbursement of debt, the cost of the debt restructuring operations, the cost of the recapitalisation of the banks, the reimbursements to the IMF and the payment of Greece's share in the ESM capital. He claims that the residual (explicitly called 'difference' by him) must represent the amount of financial assistance used for the financing of the Greek budget deficits. However, on top of methodological questionable choices (for instance, considering as "expenditure" the reimbursements to the IMF, which should really be deducted from the disbursements, and the inclusion of other questionable items), he downloads on this 'difference' the full gap of €27.7 billion between 'disbursements' and 'identified items of expenditure'. Even if his allocation of items of expenditure to 'debt' or 'state expenditure' was correct, his result would be lower than the correct figure by €27.7 billion.

Summing up. The three contributions published in 2015 put the amount of the financial assistance received by Greece and used to finance 'state expenditure' at levels varying between the €67.6 billion of Mr Mouzakis (€15.3 for the 'Budget balance', €11.7 for 'Other cash needs' and 40.6 for 'Interest payments') and the €47.8 billion of the 'difference' calculated by Mr Bortz. The Committee of the Greek Parliament estimates this amount at €48 billion (€24.6 for 'Budget balance' and €23.4 for 'Other').

None of these contributions discusses the fact that according the national accounts, between 2010 and 2014, the Greek state – excluding any reimbursement of its debt –spent €85.7 billion more than it received in current and capital account receipts (sum of the 'net borrowing requirement' of the five years). In addition, during this period, the Greek state conducted financial operations that are excluded from the 'net borrowing of the general government', but still increase the public debt, such as, for instance, the loans to the Greek banks to strengthen their capital. According to the national accounts, during the same period the sum of these operations totalled around €24 billion. None of the three contributions discusses the origin of the €110 billion that made this expenditure possible.

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