The Greek Debt Crisis

Abstract

The Greek debt crisis was a historical unicum due to the surrounding political and economic scenario. Being part of the European Monetary Union, Greece could not rely on autonomous, unilateral interest rate and monetary policies to face the crisis. Moreover, interconnection among Member States raised the point of systemic repercussions caused by a possible Greek default.

Indeed, Hellenic fragilities attempted Community subsistence, and rescue policies' design had to be discussed at Community level. The European Union was directly involved in developing adjustment programmes to correct Greek fiscal and economic imbalances, restoring national soundness, avoiding European contagion and eventually preserving political and monetary union.

The paper quantitively reports Greece's bailouts procedures in chapter one, providing a qualitative analysis of programmes' implementation in chapter two.

The research questions the effectiveness of the designed policies, which were supposed to compose Greek fiscal imbalances and to correct public inefficiencies, eventually re-enhancing economic growth. Eventually, the paper also addresses the European Union architectural defects which hindered crisis management.

Overview

Introduction

The reasons of the Greek crisis dwell in a bunch systemic conditions risen among decades of mistargeted economic policies, mainly financed on deficit. The subprime crisis spreading from US in 2008, unveiled the structural fragility of the Greek economy, posing uncertainty about Greece's financial stability: despite national economy rising at a yearly average rate of 4%, the country had indeed accumulated a debt/GDP of 109,4%.

The tipping point towards the Greek debt crisis has been outdone with Papandreou's 2009 speech: the just-elected prime minister communicated the revision of national deficit forecasts from 6,7% to 12,7% of Greece's GDP. Deficit actually ended up reaching 13,6% (furtherly adjusted later on to 15,1%).

The loss of confidence determined by the new financial scenario, furtherly stressed by the contraction of worldwide economy, led to a fall in Greek trustworthiness, with rating agencies downgrading Hellenic bonds: Greece was relentlessly proceeding towards national default. Such outcome would have led to detrimental consequences on international and particularly European level. The reason is twofold: in an economic perspective, Greek debt was mainly external and owned by German and French banks. A default would have therefore heavily reverberated on the Eurozone economy. On a political level, the default of a member state would have meant the failure of the European Union.

The commitment in saving Greece resulted in the 2010 adjustment programme, financed by the EU's member states, the International Monetary Fund and the European Central Bank, in exchange for Papandreou's engagement to run austerity policies, aimed at reducing current imbalances and public debt, and at improving national efficiency and competitiveness.

Despite progress made by Greece in the reforming process, the economic scenario incurred a downturn at the end of 2011 and a supplemental adjustment programme for Greece was defined on conditionality: The Hellenic Republic was asked to restructure national debt through Private Sector Involvement (PSI) in exchange for extra funding. The second programme kept on pursuing the targets stated in the first agreement but posed a greater emphasis on long-term growth enhancing measures. Moreover, a technical taskforce supporting the Greek authorities in policy actuation was established.

The Second Adjustment Programme for Greece was officially closed in mid-2015 with consistent achievements reached. However, in July 2015, the Greek Government asked for a European Stability Mechanism programme aiming at furtherly supporting the reforming process. EU institutions agreed upon extra financial disbursements and provided the required technical assistance to the Hellenic country.

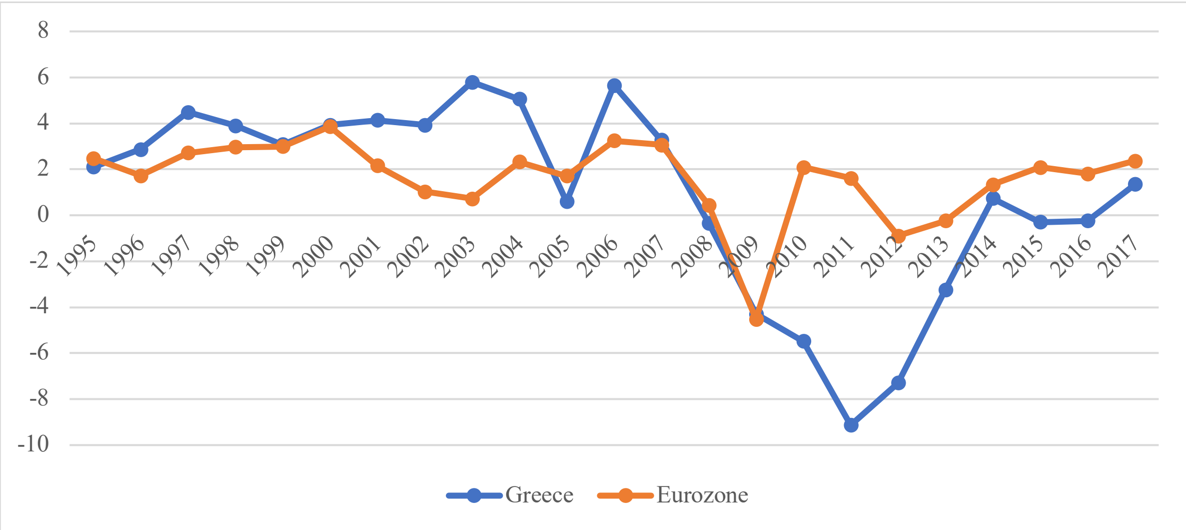
Eventually, in August 2018, after the greatest disbursement of financial aids consisting of a comprehensive rescue plan of more than €300bn, Greece officially exited European supporting programmes.
On a national level, progresses have been made on several areas and fiscal projections for the future are encouraging. However, national debt/GDP is still worryingly high (above 170 percent in 2018), unemployment is consistently above EU levels (18% with respect to 7%) and GDP per capita only shows mild recovery after a massive collapse. These evidences pose doubts about austerity measures' effectiveness and question the social and economic outcome of the implemented policies.
Chapter 1 provides a macroeconomic background (1.1) to better visualize Greek path towards the crisis and its eventual deflagration, and reports a quantitative description of the three programmes undertaken by Greece over the period 2010-2018 (respectively 1.2, 1.3 and 1.4).
A qualitative analysis of the implemented policies is discussed in chapter 2. Proper focus is posed onto the issue of programmes' effectiveness, with the points offered by pro-austerity economists cornered by the anti-austerity front, which criticizes both economic outcome and the excessive effort the Greek people was subjected to. Indeed, although stabilizing debt dynamics, the implemented measures had massive social costs and ended up paralyzing national economy, posing uncertainty about future consistent recovery.
Over the last chapter, the Community's role is also questioned, emphasizing European Union's architectural defects that negatively affected institutional responsiveness and effectiveness in crisis management.

Chapter 1: The Greek debt crisis. Causes, deflagration and resolution

1.1 The economic scenario

Since the 1990s to the beginning of 2000s, Greece experienced some of the highest growth rates in the Eurozone (Figure 1). The entrance in the European Monetary Union in 2001 helped Greece in dampening inflation, strengthening national soundness and fostering economic growth.
Greek average real GDP growth has been close to 4 percent per year between 2000 and 2009, against the 2 percent exhibited by the eurozone as a whole. In such time period, the Hellenic Republic managed indeed to reduce its income gap with the euro-area from 25 to about 10 percent. This reflected a domestic demand boom, in particular consumption and residential investment (EC report).

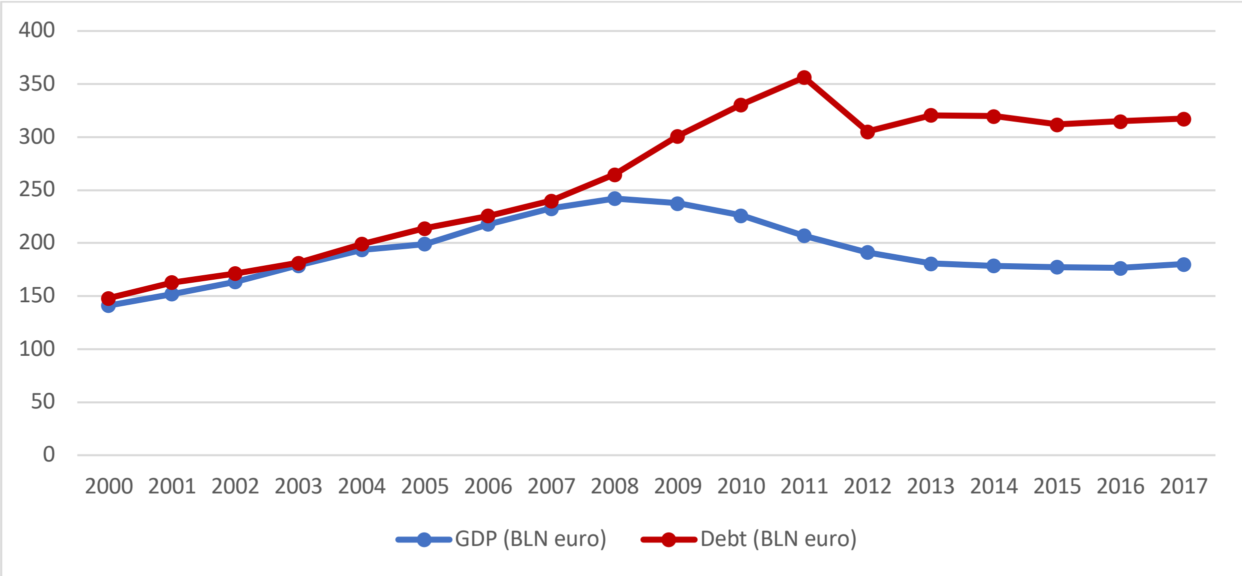
Figure 1: GDP Growth rate comparison



Source: Eurostat

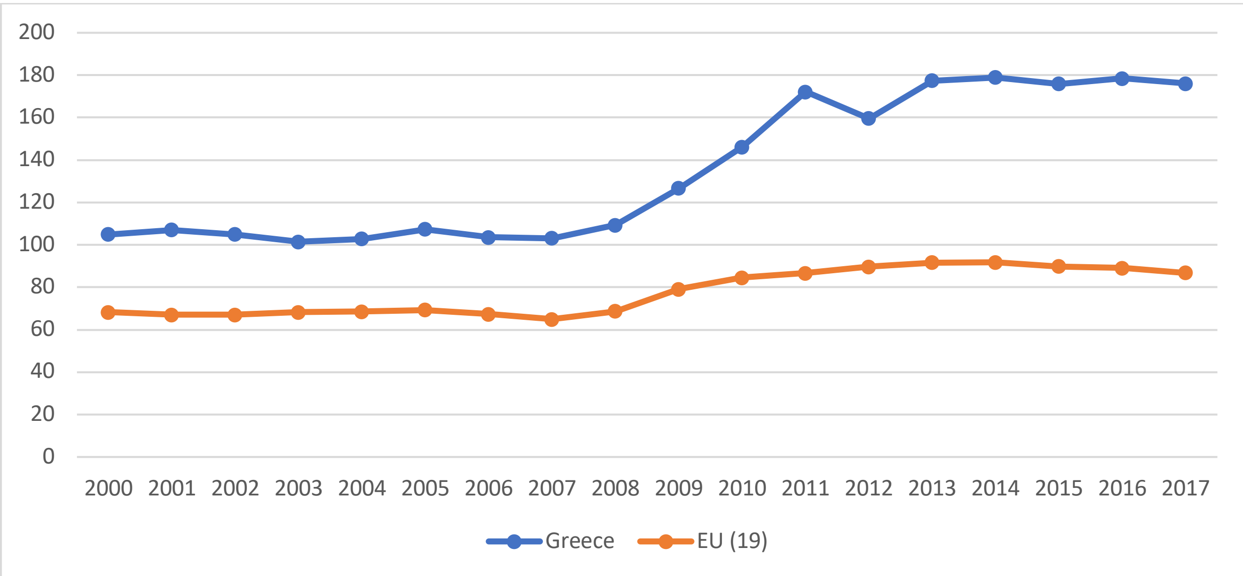
The country was generally prospering and in 2008 unemployment marked the national historical minimum of 7,76%. Nevertheless, a deeper analysis on economic indicators reveals systemic fragility of the Greek economy: the country was highly exposed to financial markets' fluctuations due to its huge public debt, with a debt/GDP constantly and substantially above the 60% limit indicated by the Maastricht criteria (Figures 2 and 3). In particular, Greek debt/GDP remains around 100% showing almost same dynamics of EU19's ratio from 2000 until crisis' deflagration.

Figure 2: The evolution of Greek GDP and Debt (in BLN of euros)



Source: Eurostat

Figure 3: Debt to GDP ratio comparison



Source: Eurostat

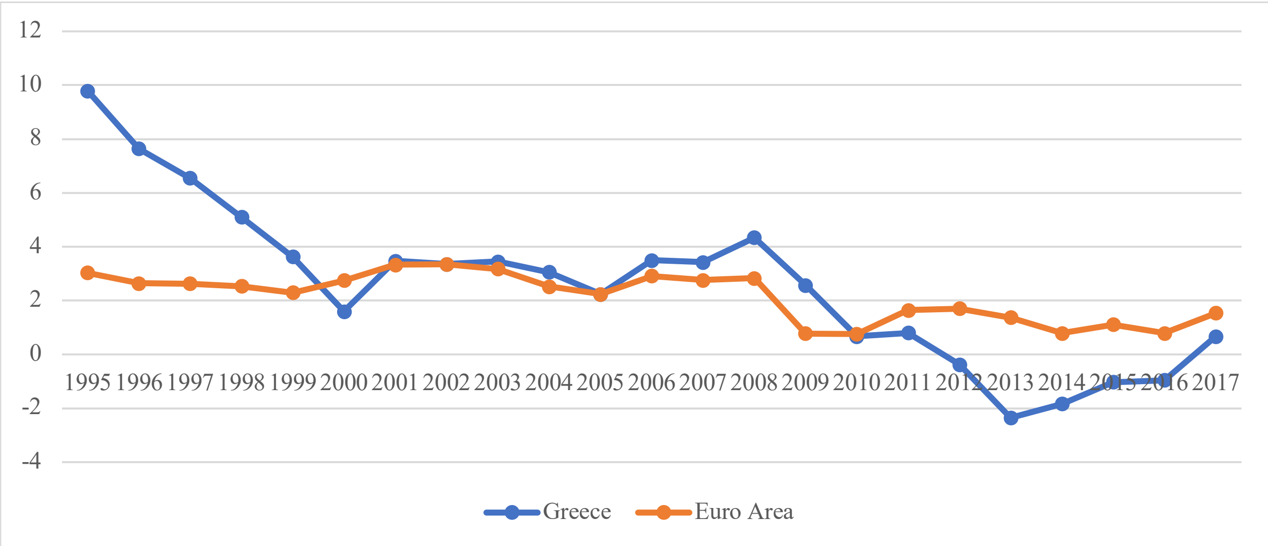
As the European Commission reports in its paper in May 2010, the accumulation of macroeconomic imbalances, large stocks of public and external debt, weak external competitiveness, an unsustainable pension system, and weak institutions made Greece vulnerable to an increase of risk aversion in the international capital markets.

The subprime crisis spreading from USA in 2008 unveiled and eventually exacerbated Greek fragilities.

Over the economic expansion period, real wages had increased even more than actual productivity. The government wage bill doubled over 2000-2008 (and grew by a further 7,5% from 2008 to 2009), with respect to a nominal GDP increase of 74 percent. ULC[1] grew at average yearly rate of 4,1 percent for the entire decade (OECD data). In the same time period, Greek REER[2] appreciated by 18 points (with 2010=100 set as reference year – WorldBankData). Greece lost competitiveness, worsening net external balances and degrading national accounts.

Another factor determining loss of competitiveness was inflation (Figure 4). The entrance in the monetary union in 2001, with the ECB as the guardian of monetary stability, mitigated Greek inflation level, which however remained higher than euro area standards. Nevertheless, a sharp decline in the inflation level to improve exports would have had detrimental effects on the debt to GDP ratio, furtherly worsening central government soundness.

Figure 4: Inflation rate comparison



Source: WorldBankData

In the Global Competitiveness Report for period 2008-09, the World Economic Forum ranked Greece 67th out of 133 countries and identified inefficient government bureaucracy, corruption, restrictive labor regulation, tax regulation and policy instability as the most problematic factors for doing business.

In general, Greece required structural measures targeting labor and product market efficiency, reducing frictions and improving national competitiveness.

[1] Unit Labour Costs: measure the average cost of labour per unit of output and are calculated as the ratio of total labour costs to real output (OECD definition).

[2] Real Effective Exchange Rates: take account of price level differences between trading partners. Movements in REER provide an indication of the evolution of a country's aggregate external price competitiveness (OECD definition).

Despite submitting the first stability programme in December 2000, aiming at composing the already accumulated fiscal imbalances, Greece soundness went on degrading year by year, with the country constantly missing prefixed targets. Failures were mainly due to overoptimistic tax projections (with national raising capacity constantly mined by tax evasion) and public overspending. In particular, public spending in the government sector grew from 44% of GDP in 2000 to over 50% in 2009, "catalyzing financing, crowding out private-sector resources and therefore weakening national economy" (EC reports).
All these factors contributed to worsen the current account deficit which led to a significant increase in national debt.

Greek accounts have constantly and considerably been far away from the benchmarks set in the Maastricht criteria: even in the pre-crisis period, Greek current deficit has always exceeded the 3%, with government debt being constantly around 100% of GDP.
Despite the favorable economic environment of the time period 2000-2008, Greece never managed to compose its imbalances, which persisted under the veil of a rising GDP. The 2008-2009 global crisis uncovered such vulnerabilities, exposing Greece to financial markets' apprehension.
The result was a heavy downturn in public finances. Contraction cut down government revenues, worsening current deficit. In particular, 2009 deficit estimates were negatively revised from the 3,7% forecasted in the SGP (Stability and Growth Programme) of January 2009 to the 12,7% of the EDP notification (Excessive Deficit Procedure) in October 2009. Estimates ended up reaching 13,6% of GDP in the EDP notification of April 2010. The new scenario fueled financial markets' agitation, with rating agencies downgrading Greek bonds and interest rates on government debt jumping up as response to the rising sovereign risk.
The national account deflagration had huge repercussions on the Greek banking system as well. Hellenic banks were directly exposed, owning about €40bn of government liabilities (according to the Bank of Greece, about 8% of their total assets). The increase in rates led to a fall in the value of such liabilities, determining huge losses for credit institutions. Money markets became increasingly expensive for Hellenic banks, making them dependent on the ECB. Furthermore, the loss of confidence spurred withdrawals from both citizens and other financial institutions. The sector tried to cope: in 2009, capital adequacy was raised from 9,4% to 11,7% for preventing defaults, and banks increased the share of liquid assets from 38,7% to 45,2%. However, non-performing loans began increasing (from 5% to 7,7%) and ROE felt below zero. Access to credit became very expensive and

withdrawals were constricted, with the crisis eventually spreading from the financial sector to the real economy.

On an international level, one of the greatest concerns stemming out from the Greek crisis was the fear of European contagion, which could have followed two different paths: on the one hand, Greek debt was mainly external, meaning that many other European financial institutions (in addiction to Hellenic banks) were exposed to the loss in value of government liabilities.

On the other hand, increasing sovereign risk might have affected creditworthiness of all those countries with fiscal imbalances and high public debt (namely Ireland, Italy, Portugal and Spain). Furthermore, an expanding crisis affecting other fragile countries may have eventually reverberated on the entire euro-area with unpredictable outcomes.

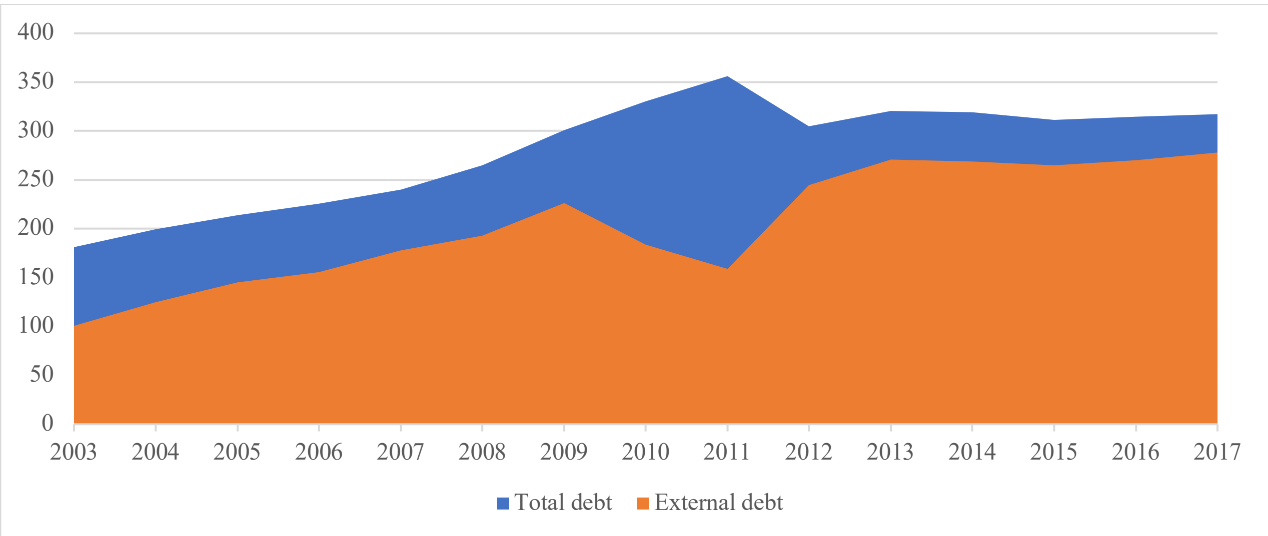
To limit the spreading of the crisis, the ECB adopted non-standard measures to support financial conditions and credit flows to the euro-area economy.

From June 2009 to June 2010, a Covered Bond Purchase Program (CBPP) took place: the ECB purchased € 60bn of covered bonds (which are the primary source of funding in the euro area) aiming at lowering money market rates, easing funding conditions for credit institutions and enterprises.

Further programs followed. A € 240bn Securities Market Purchase Program (SMP) was adopted in May 2010 to provide liquidity to the secondary market for government bonds, strengthening monetary policy transmission. In November 2011 a second CBPP was launched, lasting until October 2012, for an overall estimated purchase of € 40bn.

The evolution of Greek central government debt in billions of euro is reported in Figure 5.

Figure 5: Greek Central Government debt (BLN euros)



Source: Eurostat

The graph offers a valuable visual representation of the proportion of the external debt and of the effects of the CBPP1 on Greek debt composition (ECB moved from owning € 49,973bn of Greek debt in 2009 to € 125,115bn in 2011, with sharp decline in external debt share). A second meaningful anomaly in the trend of Figure 5 is registered in 2012, with a sharp decline in overall debt and the external component bouncing up again. It corresponds to the second bailout agreement, when Greece restructured private owned debt (sharp decline) in exchange for European financial aids (rise in external debt). Bailouts are going to be discussed with more accuracy later on in the chapter.

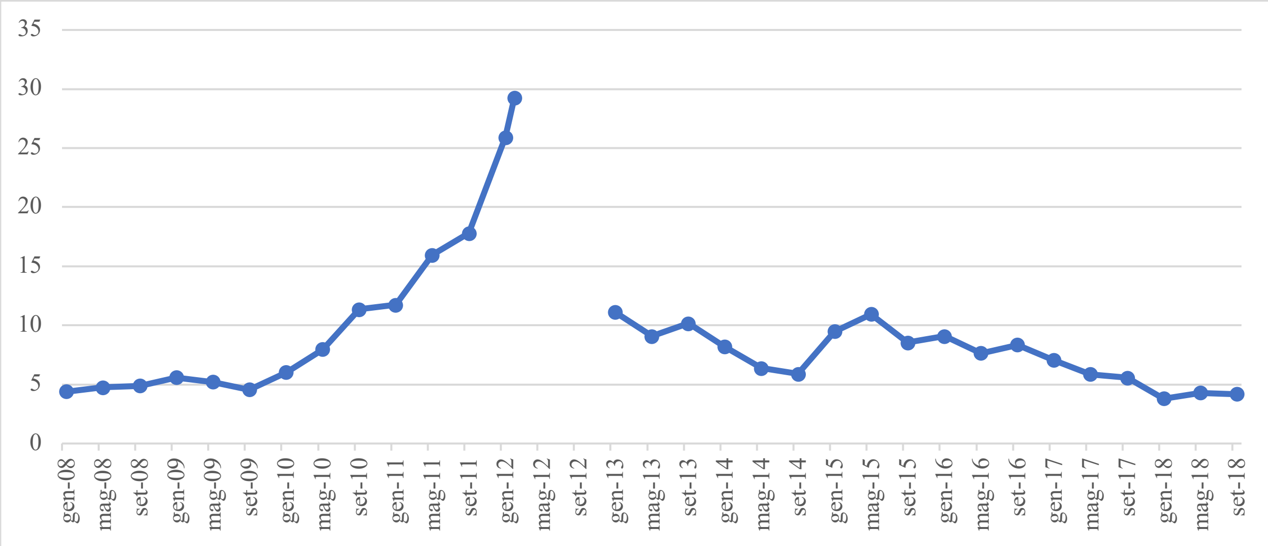
The ECB non-conventional policies, supported by structural measures from the troubling national governments aiming at composing medium run imbalances, managed to partially but significantly contain the European contagion, limiting negative spillovers and avoiding other "Greece-like cases". In particular, the fully declared commitment from the ECB in preserving the euro was essential in mitigating financial markets' agitation. The Economic Analysis and Research Department of the Bank of Greece affirms in its working papers that such strong position had indeed more effect in lowering rates and relaxing financial markets than monetary policies themselves, and estimated the confidence effect of the "Whatever it takes" in about 750 basis points, with respect to the 18 basis points per billion attributed to the SMP.

Despite measures adopted by the ECB and international financial support, the adjustment of Greek imbalances took place in an unfavorable scenario, characterized by economic contraction, rising unemployment and great social tensions. Greece found itself cornered more than once, being obliged to run harsh policies in order to avoid national default.

1.2 The First Adjustment Programme for Greece (2010-2012)

The recantation of Greek deficit in 2009, officially confirmed in Papandreou's October public speech, definitively compromised Greek financial trustworthiness, with creditors progressively demanding higher rates (Figure 6). Financial and economic ripercussions on the country were almost immediate, up to the point that the issuance ok Greek bonds on financial markets was stopped, with Greek authorities officially asking for financial assistance in spring 2010.
The Hellenic bonds remained on the secondary market until 2012, when institutions asked for debt restructuring thorugh Private Sector Involvement (discussed in chapter 1.3 of the paper).

Figure 6: Greek Government Bonds (YTM 10y)



Source: Bank of Greece

The European Commission, European Central Bank and the International Monetary Fund offered a bailout program consisting of €110 billion (€80 from EU MS and €30 from IMF under a Stand-By Arrangement) in exchange for Greece's commitment in running austerity policies aimed at restoring macroeconomic stability and sustainable long-term growth. The planned disbursement consisted of €38bn in 2010, €40bn in 2011, €24bn in 2012 and €8bn in 2013. The entire amount (except for €10bn addressed to the Financial Stabilization Funds) was intended to be used to cover public sector financing needs, servicing national debt.

The amount of €110 billions was then revisited downwards by €2,7bn as Slovakia decided to retire from the Greek Loan Facility Agreement and as Portugal and Ireland quitted the program requesting themselves financial support.

Eventually, MSs and IMF disbursed €73bn by 2012 (€52,9 and €20,1 respectively). The contribution by euro-area Member States to Greece under the first financing program in reported in Table 1.

Table 1: MSs' disbursement (May 2010 – December 2011)

EUR (million)								
	BE	DE	IE	ES	FR	IT	CY	LU
	1942,5	15165,3	347,4	6650	11388,6	10007,5	109,6	139,9
	MT	NL	AT	PT	SI	SK	FI	TOT
	50,6	3193,8	1554,9	1102,3	243,5	-	1004,1	52900

Source: European Commission services

Loans from the Member States were governed by the European Commission, which opened an account with the ECB, disboursing tranches quarterly on conditionality. Interest is calculated on 3 months Euribor plus a 300 bp spreads for the first three years (400 bp thereafter) plus an up-front service charge from Member States of 50 bp.
Progress in programme implementation will be monitored by EC, ECB and IMF through quarterly quantitative performance criteria and indicative targets.
In the meantime, Greece had started the reforming process, attuatting agreed policies. The short term target of the program concerned restoring Greek creditworthiness and financial soundness, with the fiscal system and the pension system reforms coming at the top of the agenda in order to reduce public spending, to increase revenue-raising capacity and to ensure investors about longer term reliability. Moreover, Greece had to address the liquidity issue affecting the banking system, aiming at riducing deposit outflows and monitoring banks' assets quality in order to avoid defaults.
Medium run focus was instead adressed at improving Greek competiveness through an extensive labor market reform, aimed at fostering productivity, increasing wage flexibility (collective bargain system was revised) and tackling undeclared work and unemployment (especially youth and low-skilled). The overall strategy pursued the goal of reducing labor cost in business economy by 15% in a 3 years period boosting investments and export.
The final target was to stabilize government debt ratio by the end of the program (2013-14). But the financial stress to which the country was subjected, plus the strict austerity policy imposed by the terms of the bailout agreement, prefigured a period of economic recession, which was indeed forecasted by the European Commission, preannouncing contractions of 4 percent and 2,6 percent respectively in 2010 and 2011. Moreover, the process of fiscal consolidation was hindered by the need of restoring Greek price competitiveness, focused on domestic price adjustments.
Unemployment was expected to rise, peaking 15,3% of the labor force in 2012 and slowly decreasing in the following years.

Table 2: Macroeconomic Framework forecast

	2009	2010	2011	2012	2013	2014
	(Percentage change over the previous period)					
Real GDP growth	-2	-4	-2,6	1,1	2,1	2,1
- Domestic demand contribution	-2,5	-7,5	-5,9	-0,7	0,8	1
- Net trade contribution	0,7	3,5	3,2	1,7	1,4	1,1
Unemployment rate	9,5	11,9	14,8	15,3	14,9	14,6
HICP inflation (average)	1,3	1,9	-0,4	1,2	0,7	0,9

Source: Greek authorities and European Commission

In an unchanged-policy baseline, the fiscal scenario would have become unsustainable, with government balance peaking -15,9 percent of GDP in 2013. Actuating the program, the Commission aimed instead at reducing the 2009 estimate of -13,9 percent to below -3 percent in 2014, with the improving primary government balance partially compensating for the rising interest payments.
The debt to GDP ratio was expected to increase until 2013 (overcoming 2009 level by more than 30 percentage points) with first decline estimated in 2014. Current accounts forecasts reported progressive improvements, even though Greece was expected to close each year of the program in deficit.

Table 3: Macro-fiscal adjustment

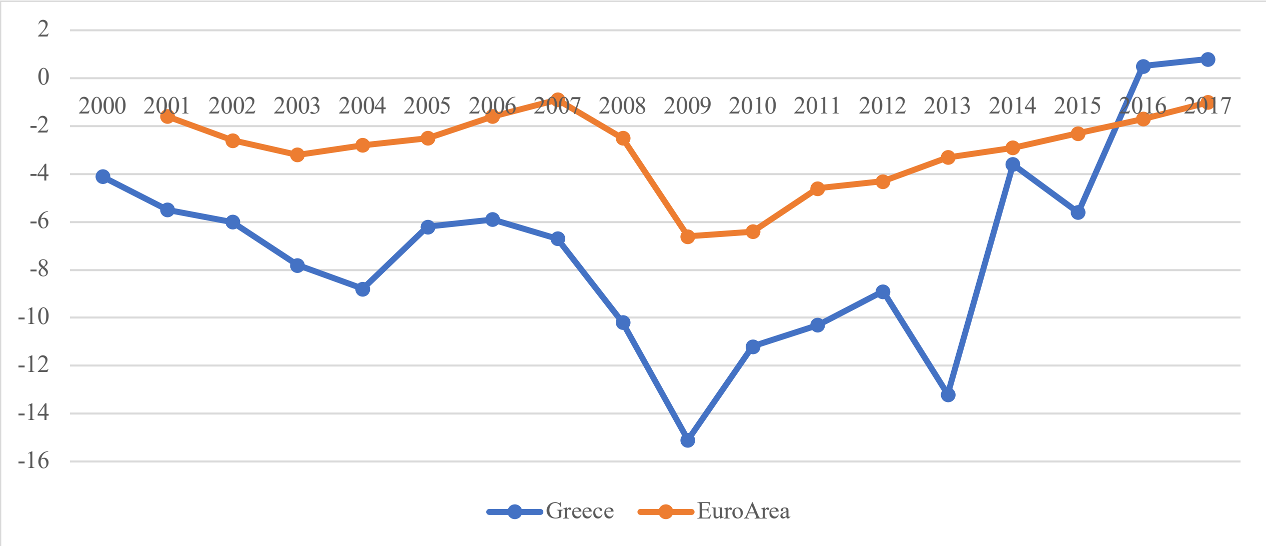
	2009	2010	2011	2012	2013	2014
	(in percent of GDP)					
General government balance, baseline	n.a.	-10,5	-14,5	-15,6	-15,9	-15,6
General government balance, with	-13,6	-8	-7,6	-6,5	-4,9	-2,6
- Primary government balance	-8,6	-2,4	-1	0,9	3,2	5,9
- Interest payments	5	5,6	6,6	7,5	8,1	8,5
General government gross debt	115,1	133,2	145,2	148,8	149,6	148,4
Current Account balance	-13,1	-10,8	-8,4	-6,9	-5,6	-4,3
- Trade balance	-10,2	-7,3	-4,7	-3,2	-1,9	-0,6
- Non-trade items	-2,9	-3,6	-3,8	-3,8	-3,7	-3,6

Source: Greek authorities and European Commission

Indeed, agreed targets seemed at risk by their conception since macroeconomic scenario resulted worse than expected: in April 2010, Eurostat revised upwards government deficit for 2009 with a new estimate of 13,6 percent of GDP (previous one was 12,7 percent) and announced a possible further upward revision up to 0,5 percent of GDP (Ex-post, deficit peaked 15,1 percent). Moreover, despite authorities' forecast of a -0,3 percent mild recession, economic indicators preannounced a heavier downturn in the economy.
Figure 7 reports a fiscal balances comparison between Greece and the euro area. Despite Greece consistently presenting a heavier deficit, the trend in comparable until 2008. 2009 represents Greek tipping point with crisis' deflagration and it is followed by re-composition over the adjustment

programmes (2010 onward). Greek path towards recovery was characterized by downturn in the economic scenario in 2013 and 2015 (discussed later on in chapter 1.3 and 1.4) with Greece eventually having fiscal surplus in 2016 and 2017.

Figure 7: Surplus/Deficit as percentage of GDP



Source: Eurostat

The adjustment plan was focused on expenditure cuts and on increasing revenue raising capacity. In particular, implemented cuts accounted for about 7 percent of GDP, while the tax measure consisted of about 4 percent increase (avoiding direct taxation and production costs not to have detrimental effects on competitiveness). The plan for fighting tax evasion was a main issue, but it was not considered in fiscal projections for prudency principle.

Table 4: Consilidation measures

	2010	2011	2012	2013
	(In percentage of GDP)			
Revenue measures	0,5	2,9	0,7	-0,3
Expenditure measures	1,9	1,2	1,7	2,3
Total annual impact	2,5	4,1	2,4	2

Source: Greek authorities, European Commission, IMF.

Revenue measures to be completed by the end Q2-2010 included an increase in VAT aiming at a yield of €800 million (€1,8bn for a full year); increase in excises for fuel tobacco and alcohol aiming

at raising €450 million (€1,05bn for a full year). A tax reform was also discussed aiming at easing and simplifying the tax system, eliminating exemptions and preferential regimes.
However, greatest contribution was given by expenditure measures. Cuts deeply affected wages and pensions, which accounted for three quarter of public expenditure in 2009. The year 2010 was the first in a decade with a public wage bill decline, with a fall in nominal remuneration of about 14% compared to 2009.
In particular, seasonal bonuses were abolished and Christmas, Easter and summer bonuses were replaced by a unique flat premium disbursed up to a certain threshold (EUR 1000 bonus for gross monthly wages below EUR 3000; and EUR 800 bonus for gross monthly pensions below EUR 2500). Overall saving was estimated to be about €3,5bn for a full year.
Moreover, monthly pensions exceeding EUR 1400 in gross terms were subject to an average 8 percent cut by Q2-2010, affecting 10% of pensioners and determining a yearly saving of €500 million. Indexation of pensions was frozen by Q3-2010 aiming at €100 million savings.
Great focus was posed onto the unsustainable pension system, characterized by an average retirement age of 57: in a baseline projection for the period 2010-2060, pension expenditure as a share of GDP was expected to increase by about 12,5% (EU average was 2,4% of GDP).
Retirement threshold was set to age 65, and automatic adjustment to increases in life expectancy was implemented. Pension award formula was abandoned for a contributory-based scheme in order to strengthen the link between contribution and benefits. Lower upper-limits were introduced. In addition to provide a greater sustainability, the new reform aimed at improving transparency, fairness and at simplifying the highly fragmented pension system.

The program also included labor and product market reforms to solve the issue of national competitiveness. EC recognizes several fields of intervention: inefficient markets had led to markups and consequently high inflation; wages rigidity obstructed efficient allocation of resources; inefficient public sector drained out resources from private investors, offering expensive and poor quality services; public policies failed to provide adequate support for the drivers of productivity growth (R&D and education).
Labor market reform did not posed conditionality on private sector's wages, except from lowering the minimum wage. EC, IMF and ECB ascertained that a cut in labor costs could have been absorbed by increases in mark-ups because of the oligopolistic nature of many sectors in Greek economy. Moreover, EC reports that Greece's export structure is concentrated in export of services (whose demand is not price elastic) and in capital-intensive goods (for which cost of labor is marginal).

Eventually, “a cut in private wages would have led to a more inequitable distribution of income across society”.
Rather than directly targeting private sector wages, the program focused on calibrating the wage-setting mechanism. A new bargaining system was debated with trade unions (abandoning the format of collective agreements to all enterprises) and access to the labor market for weaker categories was eased (high EPL[3] for women and for temporary and young workers was addressed). Sub-minima wages for the young and long-term unemployed were introduced, firing rules and costs as well as part-time and temporary work regulation were revised. The final target was to ease contract renegotiations and promote wage flexibility in order to make labor market more dynamic.
Moreover, cuts adopted in the public sector employment were expected to have positive spillovers on the private sector, furtherly strengthening the wage-setting mechanism.

The committed product market reform addressed inefficiencies stemming out from the business environment. Some measures were horizontal, such as those concerning the simplification of business start-up requirements, the lowering of licensing burdens, the reduction of administrative burden on firms. Some others were sectorial: directives addressing the energy sector aimed at liberalization and at rationalizing consumer tariffs. About transport, main target was to end persistently large losses, implementing EU directives and opening up the market to competitors.
In general, Greece had missed the implementation of many EU directives in several relevant economic sectors over time. Recovering the lags in transposition of measures would have simplified the legislative framework, improving competitiveness.

Structural reforms also aimed at modernizing public administration and reducing operating costs.
A single payment authority for public sector wages was created in order to reduce inefficiencies and a simplified remuneration system applicable to all public sector employees was enacted.
At local level, some municipalities, prefectures and regions were merged.
Government ensured full operation of the Better Regulation Agenda to reduce administrative burden by 20% with respect to 2008.
The healthcare system was also addressed, with main target being reducing wastes and inefficiencies (i.e. providing generic medicines and including an electronic monitoring of doctors’ prescriptions).
On the financial sector side, the immediate target was to solve the liquidity issue of banks, which had lost the access to wholesale markets at the end of 2009, becoming dependent on the ECB.

[3] The OECD indicators of employment protection legislation measure the procedures and costs involved in dismissing individuals or groups of workers and the procedures involved in hiring workers on fixed-term or temporary work agency contracts.

Furthermore, the threat from rating agencies to downgrade Greek bonds below BBB- increased the uncertainty around the banking system[4]. To cope, the government had already issued a EUR 28 billion support package to banks, subsequently extended in size and duration, and the Bank of Greece granted emergency lending assistance. Nonetheless, the risk of acute liquidity stress was only avoided in May 2010, when the ECB decided to accept Greek liabilities regardless their rating (this measure did not belong to the Adjustment Programme for Greece).
A Financial Stability Fund was created in order to provide equity capital (not liquidity support) for troubling banks, aiming at contrasting the plausible further deterioration in banks' asset quality. The Fund consisted of 10 billion financed by the international financing package.
In addition to supporting measures, supervision on the banking system was strengthened, with IMF EC and ECB demanding more frequent reports.

In general, the program allowed some flexibility in order to adjust measures according to the developing economic scenario, giving the chance to speed up fiscal consolidation in case of favorable environment or to adopt further measures in case of economic downturn. Finally, the fiscal target was to reach and maintain a large primary surplus (authorities agreed upon at least 5 percent of GDP up to 2020) in order to ensure a decline in government debt ratio even after the end of the programme.

European Commission also identified factors of great concern, which might have jeopardized programme's effectiveness:

- Economic growth: The reaction of the economy to ongoing financial stress was highly uncertain and social tensions might have obstructed economic recovery, also attempting fiscal stability and balances.
- Inflation level: a moderately high inflation level would have supported the fiscal position of the country, but it would also have had detrimental effects on competitiveness. Significant cuts in government expenditure might have influenced the inflation level, which required proper attention.
- Market reaction: the 18 months absence of Greece from bond markets shielded the country from investors' apprehension, giving the opportunity of restoring financial trustworthiness. However, if rates would have stabilized at relatively high levels, reintroduction would have been painful, with negative effects on economic growth and national accounts.
- Implementation risk: policies were ambitious and social costs were high, but an effective and rapid implementation was vital for achieving the targets.

[4] BBB- is the least quality of bonds accepted by the ECB as collateral.

- Data surprises: 2009 fiscal estimates were worse than forecasted, determining a deterioration in macroeconomic projections. Further unexpected negative data would have required swift communication in order to better calibrate policies and measures, also aiming at avoiding detrimental effects on market feelings.
- Banking sector: in spite of important measures taken, further troubles in the banking sector could not be excluded. Such troubles would have had negative repercussion on the program as a whole, affecting public financing and economic trend.
- Contagion from abroad: Greece was sheltered from financial markets, but skepticism about the euro area might have furtherly worsened Greek situation.

Indeed, despite significant progress made by Greece throughout 2010 and 2011, the program was hindered by political instability, social unrest, issues of administrative capacity and by a recession that was deeper than forecasted. EC reports that structural reforms implementation was partial and that it did not contribute as expected to growth. Moreover, insufficient progresses were made in modernizing revenue administration and expenditure control. Despite this, Greece eventually managed to reduce deficit from 15,75% in 2009 to 9,25% in 2011 and to meet performance criteria for primary expenditure and primary balance.

Table 5: Fiscal quantitative performance criteria

	End September 2011		End December 2011	
	Data	Criterion	Data	Criterion
General government primary cash balance	-5,3	-5	-4,8	-5,1
State primary spending	42	44,5	59,1	60,8
Central government debt	371	394	371	394
New guarantees granted by the central gov.	0,6	1	0,6	1
Source: Commission services	(In billions of euro)			

The achievements result more significant when the surrounding scenario in considered, with euro-area troubling and Greek economy contracting by about 11 percent. However, the huge unexpected economic downturn (-9 percent in 2011) and the missing of several fiscal targets, created further apprehension over the Hellenic country, up to the point that the Second Adjustment Programme for Greece was launched.

1.3 The Second Adjustment Programme for Greece (2012-2015)

In the Second Adjustment Programme for Greece, European Member States and the IMF committed in providing the undisbursed amount from the first adjustment plus an extra €130bn financing for the period 2012-2014. Supplying procedures differed from the first programme: Member States' financing was disbursed through the European Financial Stability Facility rather than through bilateral loans; and the IMF shifted from a stand-by arrangement (SBA) to and extended fund facility (EFF), allowing for longer repayment period.

Terms for the second programme were stated by the Eurogroup on the 21st of February 2012.

First request from MSs was to strengthen the Task Force for Greece, in order to supervise and provide technical assistance for the entire duration of the programme. The second, and most relevant condition, was the PSI exchange offer: Greece was asked to invite private investors to swap their high return Greek bonds with some longer maturity bonds (11-30 years) at the average rate of 3,65%. Indeed, the alternative option left to creditors was to lose the entire value of their investment due to the exercise of a collective action clause from the Hellenic government. As reported by the International Swap and Derivative Association, Inc. (ISDA): "… the exercise by the Hellenic Republic of collective action clauses to amend the terms of Greek law governed bonds issued by The Hellenic Republic such that the right of all holders of the Affected Bonds to receive payments has been reduced".

The PSI provided a nominal cut amounting to 53,5 percent, involving an aggregate outstanding face amount of approximately EUR 206bn. Private sector holders were allowed to exchange bonds for:

- New bonds to be issued by Greece with a face value of 31,5% of the face amount of their exchanged bonds;
- ESFS notes with a maturity date with a maturity date of two years or less and having a face value of 15% of the face amount of the exchanged bonds, and
- Detachable GDP-linked securities issued by Greece (in case nominal Greek GDP overcomes a given threshold, and in case of a positive real GDP growth over specified targets, this instrument provides an amount of up to 1 percent of its nominal amount for annual payments beginning in 2015).

On the PSI settlement date, Greece also released short-term ESFS notes in discharge of unpaid accrued interest on bonds.

As expressly defined by the Eurogroup, new bonds have a 30 years term (final maturity in 2042) and an amortization period starting on the eleventh anniversary of the issue date. They bear a coupon of

2,0% p.a. to the payment date in 2015, 3,0% p.a. to the payment date in 2020, 3,65% p.a. to the payment date in 2021 and 4,3% thereafter. Interest accrues starting from 24 February 2012.
The PSI was recognized as an essential measure for a successor programme.
By their side, Member States committed in allowing for the provision by EFSF of:

- A buy back scheme for Greek marketable debt instruments for Eurosystem monetary policy operations;
- The euro area's contribution to the PSI exercise;
- The payment of accrued interest on Greek government bonds;
- The residual financing for the second adjustment programme.

In particular, any income generated by the Securities Market Programme launched by the ECB was reallocated to improve Greece financial stability.
Moreover, any interest on Greek bonds accrued until 2020 and owed to National Central banks was planned to be passed on Greece, aiming at reducing debt ratio by 1,8 percentage point in 2020 and at lowering the financial needs over the programme period by €1,8bn. Also, MSs agreed to a retroactive lowering of the interest rates of the Greek Loan Facility for a margin of 150 bp, with a net saving of financing over the programme duration by about €1,4bn and an estimated reduction in debt/GDP in 2020 by 2,8 percent. Figure 5 offers a visual representation of the effects of PSI and of the new financial aid on Greek debt.
The second programme kept on pursuing fiscal consolidation through expenditure savings and improved competitiveness, but it redefined the main target, setting the implementation of growth-enhancing structural measures at the top of the agenda. In this view, 2012 and 2013 targets were loosened (also thanks to the higher financing and to the debt restructuring procedure which slacked fiscal concern on the country).

Economy further downturn was mainly due to internal demand contraction (-9 percent in 2011), exacerbated by high unemployment, a difficult access to credit, political uncertainty and a general negative sentiment. On the other hand, net export contributed positively (+2,4 percent) to GDP in 2011. The result was encouraging but lower than forecasted.
Medium-run economic recovery was bound to the full implementation of structural reforms, particularly those addressing labor market, aiming at increasing competitiveness through liberalizations and business environment improvement. However, since an increase in productivity takes time and results would have required some years to show up, in the short-term Greece had to deal with a necessary internal devaluation aimed at improving competitiveness by addressing wages and other production costs (in 2010-2011 the ULC declined for the first time in years). Indeed, as the

EC reported: “inflation was stubbornly and worryingly high for an economy that is entering the fifth year of recession”. In particular, the devaluation process was obstructed by the 2011 hike in oil prices and by indirect tax increase, with HICP[5] at +3,1 percent in the same year. However, weak economic activity, the reduction in wages and the enacting of the labour market reform were supposed to lead to a slight deflation in 2012 and 2013.

About the banking sector, the ECB policies and the measures from the Greek institutions mitigated the issue of soundness, but many banks required capital injections to cope with the huge losses. Non-performing loans reached 15,5% in September 2011, domestic deposit decreased by 18 percent, credit provision shrunk by 3,8 percent (-2,8% for corporations, -4,6% households).
In general, the balance sheet of Greek banking sector went down by 8,7 percent in 2011.
Moreover, the PSI confirmed by the Eurogroup in February 2012 was expected to cause huge and further losses, estimated in the 70 percent of the €43bn liability owned by the sector.
Overall recapitalization cost was expected to be around EUR 50bn.
In this view, institutions prepared to restore solvency of the sector. The recapitalization strategy was developed in order to spur private investment, with the HFSF covering the remaining part of capital needs. To better cope, the second adjustment programme provided the Fund with greater resources.

According to the unfavorable macroeconomic scenario, fiscal targets for 2012 were revised. New benchmarks became a 1 percent primary deficit in 2012 and a primary surplus of 1,8 and 4,5 percent in 2013 and 2014, respectively. The readjustment was still consistent with the final objective of a 120 percent debt/GDP by 2020 set in the first programme, but additional consolidation measures were necessary and further expenditure cuts were enacted by the early 2012.
In particular, the plan addressed:

- Pharmaceutical expenditure aiming at a reduction by at least EUR 1,08bn in 2012 (by reducing medicine prices, pharmacists’ and wholesalers’ margins, etc.);
- Public investment budget, reduced by EUR 400mln through cuts in subsidies to private investments and domestically-financed investment projects;
- The procurement of military equipment by EUR 300mln;
- Supplementary pension funds and pension funds with high average pensions, aiming at saving at least net EUR 300mln;
- Central government’s operational expenditure by EUR 190mln;

[5] Harmonized Index of Consumer Prices: is the measure of prices used by the Governing Council for the purpose of assessing price stability.

- Public sector “special wages” category, aiming at saving EUR 205mln.

Other less financially relevant measures were taken (ex. Reduction in overtime pay for doctors in hospitals by EUR 50mln, reduction in government staff by EUR 30mln). Eventually, overall cuts accounted for 1,5% of GDP.

In the second adjustment programme a consistent privatization plan was defined[6], aiming at collecting about EUR 50bn over the period 2012-2015, with targets being: €5,2bn by end-2012; €9,2bn by end-2013; €14bn by end-2014; €19bn by end-2015.

In particular, it included the sale of state-owned enterprises and company shares such as but not limited to: public gas (DEPA and DESFA); football betting (OPAP); Hellenic Petroleum (HELPE); Mining and Metallurgical Company; electricity company (PPC); railways (Trainose). Moreover, it defined the concessions of public infrastructures and services, including: Hellenic Motorways; regional airports; naval ports; mining rights. And the dismission of real estate properties.

Reduction in public employment was proceeding. The government had committed in reducing public sectors employee by 150’000 units between 2011-2015. To meet the target, the 1:5 attention rule (1 hiring for every 5 retirements) was followed strictly.

Despite results, the implementation of the labor market reform discussed in the first adjustment programme was partial and the second programme posed greater emphasis on it. Final aim was to improve flexibility and the measure was built on two pillars: minimum wage reduction and changes in wage bargaining procedures. In particular, the National General Collective Agreement discussed a reduction of minimum wages by 22 percent (32 percent for workers younger than 25). A reduction in the wage floors was also intended to fight undeclared work. Moreover, to strengthen signaling role to firm-level wages, automatic wage increase was suspended. On the collective bargaining side, new reform legislated that collective agreement can only be concluded for a maximum duration of 3 years, so that such contracts can be renegotiated in case of changing of macroeconomic condition (ex. In case of a deflation period). The regime of “after effect” was revised from six to three months and remuneration for the period was reduced. Also, labour condition in state-owned firms were aligned with those of the private sector.

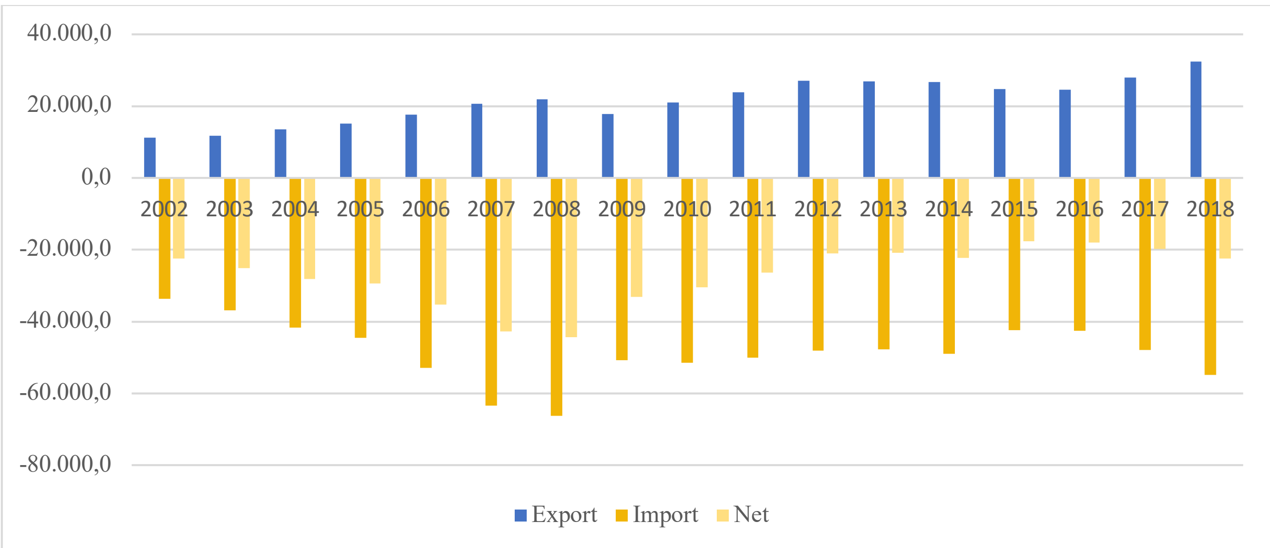
Non-wage labour costs were also addressed (mainly through a reduction in non-core social benefits) to spur employment creation. Indeed, unemployment, especially long-term, had become an issue, peaking 27,9% in 2013. Improving social safety net became an urgent priority. In 2013, criteria for unemployment assistance were enlarged: 50’000 positions in short-term and temporary programs

[6] A more modest privatization plan had already been defined in the first programme for the period 2011-2013, aiming at raising at least €1bn per year.

form longer-term unemployed were opened; 45'000 internships for young workers among private employers were subsidized by the government. Moreover, a comprehensive spending review aimed at optimizing social welfare and social protection was planned for June 2014, with the final target of creating a minimum income scheme by 2015. In the meantime, the government announced monetary support for households with annual taxable income below EUR 6'000.
Generally, Greece proceeded in the actuation of required measures under the supervision of European institutions, with the EC emitting yearly reports about fiscal consolidation and policy implementation.

The 2013 economic contraction was less pronounced than forecasted, and a mild growth of 0,6% (the first since 2009) was expected in 2014. Greece also marked a current account surplus of 0,7% in 2013 (2012 was closed with 2,4% deficit) and primary balanced budget target was met with margin. These results were supported by improved competitivity (ULC had been constantly declining – falling by about 20% between 2009/2014 - and inflation remained below EU levels), leading to greater export and investments (Figure 8 emphasizes the reduction in net import from 2008 onward). In general, implementing the labour and product market reforms, Greece managed to correct rigidities which had led to oversized sector and to wages disconnected from productivity dynamics.

Figure 8: Greek Trade Balance (in MLN euros)



Source: Bank of Greece

Tourism also provided a huge boost to the economy and in particular to the export of services. Net export was also driven by the contraction in import, resulting from both a contraction in domestic demand and from improved national competitiveness. In particular, product market reforms had significant results in reducing barriers to competition (especially in the sectors of building material, food processing, retail trade and tourism) and in easing business activities, with administrative burden reduced by 25%.

On the financial sector side, the government returned to the international bond market in April 2014, after four years. The issuance amounted to € 3bn and partially covered Q-3 2014 financial need, testifying signs of renewed trust in the Hellenic country.
Banks' liquidity position was improving, even though access to credit for the economy was still difficult, with weak lending activities. High non-performing loans level was still creating some concerning (and a latent fear of further capital needs) but the sector was generally recovering, with core banks coming back to capital markets with positive results and with the entire sector progressively reducing reliance on the Eurosystem funding (in February 2014, total central bank borrowing stood at approximately EUR 68bn, consistently below the top € 130bn of 2012).

Public Financial Management marked important achievements, with 97% of public entities reporting on the up-to-date e-portal and showing commitment registries in place. Moreover, measures taken addressing budget preparation and the strengthening of corrective mechanisms (plus the overall well performing of Greece) led to immediate results, with the EC reporting that: "The authorities have implemented a range of mainly administrative measures to secure the 2014 fiscal target which, complemented with the limited carry-over of the better-than-expected 2013 fiscal outcome, have allowed to accommodate the cost of some structural reforms and initiatives supporting socially-vulnerable groups". In particular, claw back mechanism had been taken to tackle expenditure overruns in the healthcare (about € 150mln) and military spending, as well as increases in sanctions and fees to contrast undeclared work and measures to fight weak Social Security Contributions. The consistent fiscal consolidation allowed the government to allocate € 500mln (0,25 percent of GDP) for providing socially vulnerable groups with temporary income support and low-earning personnel with one-off bonus.

The social health insurance system was rationalized: the four main social security funds (covering 95% of the population) were merged, forming the EOPYY (Greek National Organization for Health Care Provision). The final aim was to reduce administration costs and to increase access to health care. Despite progress, improvements were still needed (especially in social security contribution collection and in payments of previously accumulated arrears to suppliers).

The tax reform initially proposed in the first adjustment programme and planned for September 2011, was eventually postponed to the end-June 2012, becoming legislated only in 2013. The following year, a complementing tax system reform was launched. In particular, a new unified property tax (ENFIA) entered in force in 2014, replacing both the real estate tax and the wealth tax on property, with the aim of modernizing the tax system and of broadening the tax base. It consisted of a main real estate tax on individual properties and on a relatively small progressive tax on real estate holdings as a whole (covering both properties and land, of urban and non-urban areas, levied on individuals and entities), and aimed at raising extra € 2,4bn yet in the first year of implementation (2014).
The authorities also committed to refrain from extending tax amnesties in the future, whose adoption would have mined enforceability of tax law, and to limit instalments repayment plan to small troubling debtors.
Privatizations were proceeding but with some delays. In particular, weak demand for real estate properties contributed to a resizing of projections (about € 1,9bn). To cope, authorities defined alternative sale procedures, including asset securitization and monetization.
Despite comforting projections, implementation risk remained high. A slowdown in the reforming process might have jeopardize revenues generation, falling short on projections and subsequently compromising once again Greece's financial soundness. Indeed, if on the one hand current imbalances had been reduced, on the other debt/GDP was still high (almost 180 percent in 2014).
Assuming full implementation, debt to GDP was expected to decline consistently from 2015 onward, reaching 125% in 2020 and around 112% in 2022, with the most favorable scenario (characterized by a sharper restoring of the banking sector) showing debt/GDP of 110% already in 2020.
However, economic scenario had an unexpected downturn in Q4 2014. Moreover, Greek political election expressed the willingness of Greek people to oppose to the austerity regime and brought the Syriza party to the government. New prime minister Tsipras promptly rejected exiting bailout terms asking for a rediscussion. Financial aid disbursement was stopped by the Troika until a new deal was reached. Greece felt into an unexpected liquidity crisis, with detrimental effect on Greek financial sector (Greek stock market was even closed on June 27) and crunch to private financing.

1.4 The ESM program (2015-2018)

The second adjustment programme officially expired on 30 June 2015, but debate over a further bailout monopolized political scene since the beginning of the year. After harsh discussions, both on national and international level, the 8 of July 2015 Greek government accepted bailout's new exiting terms, also proposing a supplementary plan for technical assistance to continue supporting reforming areas. The request was discussed by the Eurogroup and eventually accepted by EC and ECB in the interest of preserving financial stability of the euro area. Technical assistance was addressed to the newly-established Structural Reform Support Service (SRSS), while the financial support was provided through the European Stability Mechanism (ESM) programme. Official agreement was reached on 14 August 2015 (in the meantime, on 20 July, a short-term bridge loan of €7,16bn through the European Financial Stabilisation Mechanism (EFSM) was disbursed to cover upcoming financial needs).

The provision from the ESM amounted up to €86bn financial aid in the period 2015-2018. Disbursements were subject to the implementation of policies agreed upon in the Memorandum of Understanding. Such policies, once again, generally aimed at restoring fiscal sustainability, safeguarding financial stability, improving growth and competitiveness, and modernizing public administration.

The first disbursement of €13bn was released on 20 August 2015, after the signature of the Memorandum, and an additional €10bn were addressed to repay the short-term bridge loan by the EFSM, covering other financing needs, making overdue payments and accommodating financial sector needs.

Guidelines principles for the provision of technical support were established, with main point being:

- National ownership of reforms. Greek authorities will assume full ownership of any reform for which support is requested;
- Strong national and European coordination. The figure of the Secretary General for Coordination was established, with the scope of being the interlocutor for the SRSS, fostering connection between institutions;
- Maintaining long-term consistency of reforms and their sustainability. Parties committed in avoiding stop-and-go policies.

Areas for support and technical cooperation were mainly the same addressed during the first and the second adjustment programme, pursuing continuity in reforms and policy implementations:

- Sustainable public finances supporting growth and jobs: in particular, public financial management and revenue administration, building on recent years achievements and aiming at correcting wastes and improving efficiency;
- Sustainable social welfare: modernizing the healthcare system, introducing a national guaranteed minimum income (GMI) for the weakest categories, and reforming public employment service;

- Safeguarding financial stability: designing strategies to manage non-performing loans and to support the financial sector;
- Enhancing competitiveness and growth: to aim at a more business-friendly environment (improving licensing process, reducing administrative burden and fostering competition), designing a national comprehensive development plan addressing all key sectors (tourism, transport, infrastructure), implementing privatizations and organizing a better management of state-owned enterprises, making effective use of European funds (€ 35bn were budgeted for Greece in the period 2014-2020).

The ESM stability programme was subject to four (positive) reviews, each of which was followed by the disbursement of the related tranche, with fourth and final review coming on 22 June 2018.
Greece was and is still kept under the focus of European institutions, with the EC enhancing surveillance reports, pursuing the 2020 target. However, a decade after the deflagration of the crisis, Greece is eventually out of European adjustment and supporting programmes.

CH2: A qualitative analysis of Greek debt crisis

The European authorities' approach to the Greek debt crisis enlivened a huge debate among academics and professionals. The declared target was to reduce the magnitude of debt to GDP ratio, which threatened national soundness and attempted recovery: national debt above 90% of GDP has detrimental effects on economic growth. Such negative effects are even exacerbated when debt is consistently externally owned, which is exactly the situation Greece had to deal with when the crisis broke out (Reinhart and Rogoff, 2010).

However, despite it was universally acknowledged that Greek fiscal imbalances had to be recomposed, economists divided upon measures to be implemented in order to reach such goal.

Alesina and Ardagna (2010) state that in the baseline consideration that a sustained and consistent growth able to sharply reduce debt/GDP (i.e. of the magnitude experienced by belligerent EU states after WWII), accumulating budget surpluses to gradually compensate national debts was the best approach to chase fiscal adjustments. In particular, they claim that spending cuts are more effective than tax increases in stabilizing debt and avoiding economic downturn. This consideration is indeed at the base of pro-austerity theories. Moreover, the two researchers support the point that fiscal adjustments may even have expansionary effects both through demand and supply side. On the demand side, by eliminating the fear for future adjustments, with consequent positive effect on current consumption and aggregate demand, and also with relaxing effects on interest rates, resulting in lower premium on government bonds, in the appreciation of stocks and bonds, and in an easier access to credit, furtherly fostering consumption and investments. On the supply side, affecting labor market and improving national competitiveness.

These considerations have been the building block of austerity policies imposed to Greece, aiming at recomposing fiscal imbalances through cuts to public expenditure in order to restore financial soundness and national creditworthiness.

Such approach was however considerably questioned, with economists raising concerns about its effectiveness and its social and economic implications. Stiglitz, Krugman and generally the front of anti-austerity, claimed that such approach stifled demand and investments, suppressing the benefits of fiscal consolidation. Ha Joon Chang affirmed that austerity never worked, reporting several debt crises (Mexico 1994, Asia 1997, Argentina 2002) where troubling countries that were forced (usually by the IMF) to cut spending aiming at budget surpluses, eventually felt in a deeper recession.

The IMF itself has progressively reconsidered austerity's effectiveness over the years, with Blanchard (former chief economist of the IMF) stating in 2010 that "many advanced economies require a credible medium-term fiscal consolidation, not a fiscal noose today". Indeed, Blanchard was one of the advocates of an equilibrate recipe for Greece, aimed at organic long-run debt reduction.

However, despite several doubts raised upon austerity policies, fiscal hardliner countries (Germany, Netherlands, Belgium, Finland and Austria) found very little political opposition. The result was that the first bailout agreement was developed on strict austerity concepts.

The practical guide to public debt dynamics provided by Escolano (2010) offers some valuable insights to better understand how different policy design (i.e. austerity or stimulus) address debt reduction.

Relevant variables are presented in Table 6.

Table 6: Notation Glossary

p_t	Primary balance in t, as a ratio to GDP at t.
d_t	Debt at the end of the period t, as a ratio to GDP at t.
π_t	Change in the GDP deflator between t-1 and t.
γ_t	Nominal GDP growth rate between t-1 and t.
g_t	Real GDP growth rate between t-1 and t.
i_t	Nominal interest rate in period t; paid in t on the debt stock outstanding at the end of t-1.
r_t	Real interest rate in period t.

$$(1)\ (d_t - d_{t-1}) = \left(\frac{r_t}{1+g_t}\right) \cdot d_{t-1} - \left(\frac{g_t}{1+g_t}\right) \cdot d_{t-1} - p_t$$

Formula 1 (Escolano, 2010) states that the change in overall national debt/GDP over a time lag (from t-1 to t) depends on three components: positively on real interest rate, negatively on real growth rate and negatively on fiscal adjustments. In particular, real interest rate and real growth rate affect the weight of outstanding liabilities to be repaid, while primary balance[7] p_t consists on the component of deficit (or surplus) derived from government's fiscal policy and annual spending. Deeply, the factor r_t depends on interest rate on government bonds (which is affected by national creditworthiness) and also by inflation (to the extent that it lowers the real interest rate). The factor g_t depends instead on country's economic performance. Ceteris paribus, when $r_t < g_t$ there is an improvement in national current position.

[7] Government net borrowing or net lending excluding interest payments on consolidated government liabilities (OECD definition).

Austerity policies imposed to Greece in the first bailout agreement were mainly built on cuts to public expenditure (tax increases were also implemented, but their magnitude as percentage of GDP was lower: 3,8% of GDP vs 7,1% of GDP in the period 2010-2013. *Table 4* of CH1 for references) aiming at positive primary balance (p_t >0). The underlying idea was to strengthen Greek fiscal position by progressively compensating the accumulated debt through primary budget surpluses in the short run and by enhancing growth and restoring Greek creditworthiness and competitiveness in the medium term, eventually leading to debt reduction ($d_t - d_{t-1}$ < 0).

After the Greek Parliament voted on the implementing measures of the first programme, the at-the-time presidents of the European Commission J. M. Barroso and of the European Council H. van Rompuy released a joint statement at the EC affirming that Greece had taken a decisive step towards a sustainable path. Indeed, ex-post evaluation showed that despite Greece managed to accomplish (even though with some delays) first bailout's fiscal and political targets, expected economic recovery did not occur.

Monastiriotis (2013) writes about the paradox of policy effort without policy outcomes, pointing out the lack of an unitary international intent, which resulted in contradictory policy statements by officials, and stressing out the detrimental impact of inflated expectations and unrealistic projections on the recovery plan, with authorities worried more about "appeasing the markets rather than about getting the numbers right". Such inconsistency at institutional and international level created "a setting of never-ending policy shocks" which kept Greece in constant apprehension.

Defects in coordination within the Troika have also been reported by the IMF, which officially stated that there has been no clear division of labor and lack of clarity in the assignment of responsibilities, hindering the sharing of expertise and competences. Authorities occasionally also differed in views, especially regarding growth projections. In addition to internal issues, the Troika had to deal with external pressures coming from inconsistent and contrasting signals from euro leaders.

However, the main criticism from Monastiriotis was directly moved against the designed policies package, but the Greek economist also recognized that implementing a credible and sustainable long-term debt reduction based on expansionary measures was not feasible due to macroeconomic scenario. On the contrary, neo-keynesian economists believed that the implementation of such expansionary policies intended at stimulating the economy was the only conceivable path. Chodorow-Reich, Karabarbounis and Kekre (2019) stressed out the importance of compensating aggregate demand, furtherly highlighting how constrictive measures and high taxation on spending and on capital income suppressed economic revamp.

Lapavistas (2018) not only criticized the economic rationale behind austerity, but directly targeted the first bailout agreement, stating that it totally ignored realities of the Greek economy and the impact of the proposed policies. Fiscal adjustment was disproportionate and furtherly suppressed aggregate demand which collapsed in 2011-2012 (see chapter 2, Figure 9). He affirmed that the failure of the programme was already certain in middle 2011 and that it was evident that Greece required a debt restructuring process.

Indeed, fiscal adjustments correctly aimed at targeting overspending and inefficiencies, but the programme missed consistent measures to enhance and support growth. Plus, fiscal multipliers were overestimated (IMF ex-post analysis estimates twice as much). Eventually, despite progress were made in national primary balance, lasting economic contraction led public debt to growth furtherly.
The first bailout agreement was bound to fail by its conception, and the pursue of fiscal consolidation resulted in a consolidation of the economic crisis, with GDP growth peaking down at the end of 2011. All the effort made in adjusting the parameter p_t was outdone by negative real GDP growth rate g_t, which led to $(d_t - d_{t-1}) > 0$, meaning a further and consistent increase in Greece's national debt (overcoming 170 percent of GDP in December 2011).
The failure of the First Adjustment Programme for Greece was indeed unequivocally proved by poor economic results, and also directly declared by involved authorities. IMF states that the programme avoided a disorderly default and limited euro-wide contagion but the recession has been deep with exceptionally high unemployment. Eventually, the programme did not restore growth and did not regain market access as it had set out to do. Doubts and criticisms raised by Stiglitz, Krugman and the anti-austerity front revealed indeed to be grounded and premonitory.
However, the ineluctability of the programme has never been questioned: a hypothetical Greek default would have seriously (and more dangerously) threatened both the European and world economy. Generally, the first adjustment programme provided some relief to general concern. However, the IMF states that economic stability was mainly ensured by ECB's policies (i.e. the Securities Markets Programme - SMP) and by the creation of the European Financial Stability Facility (EFSF) which contributed significantly in creating the firewall against European contagion.
According to the IMF report (2013), debt restructuring could have strengthened the First Adjustment Programme. However, the option of the Private Sector Involvement was initially ruled out by the euro area countries for three main reasons:

- Debt restructuring raised the moral hazard of the operation by relieving Greece from its debt burden at the cost of creditors. The country could have indeed shown less political involvement in policy implementation;

- Would have hurt Greek banks' balance sheets, implying extra financing for banks' recapitalization;
- EFSF was not yet in place and European banks owned large shares of Greek bonds. Debt restructuring could have consistently raised the risk of contagion.

Ex-post analysis proves that debt restructuring was not avoided but only postponed. IMF reports that not tackling public debt promptly compromised the effectiveness of the first bailout, also "creating uncertainty about the euro area's capacity to resolve the crisis" which eventually exacerbated output contraction. The delay also allowed a consistent share of private investors to reduce their exposure by shifting debt into official hands, limiting the bail-in capacity at the cost of the official sector itself and of taxpayers.

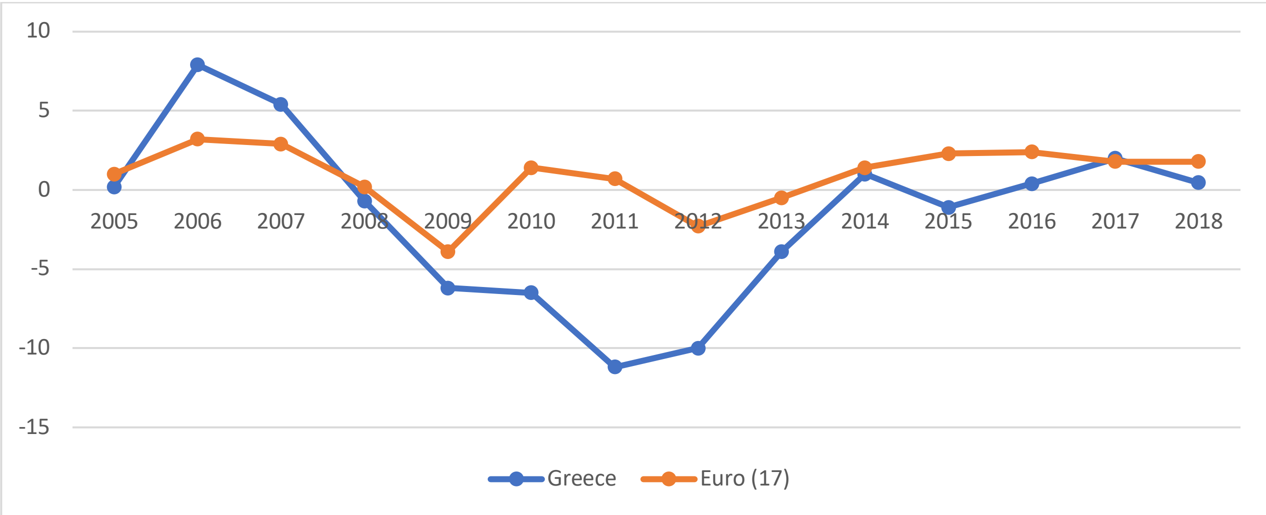
Moreover, a change in debt's composition following official sector intervention would have lowered interest rates. As Dellas and Nieplt (2013) argue, official creditors have larger enforcement powers than do private creditors, being therefore able to lend at lower rates than can private lenders. The greater enforceability relies on the higher cost of defaulting against the official sector. In particular, a Greece default on private liability would have possibly meant an exclusion financial markets (as indeed happened) and a loss in national financial trustworthiness. On the other hand, a default on official sector liability would have also implied political repercussion, a threatening of exclusion from the euro area or heavy international sanctions. As a result, the change in debt composition furtherly allowed spreads on interest rates to decline.

The only positive element from delaying was that euro partners managed to strengthen the above-mentioned firewall against contagion.

Debt restructuring was eventually posed as a necessary condition for a second bailout (as reported in chapter 1.2). Fiscal consolidation remained a core element in the development of the policy package, but greater emphasis was posed onto the implementation of a growth-enhancing plan. Fiscal targets were also loosened, but no expansionary measure (i.e. subsidies, tax breaks) was undertaken neither to support the country during fiscal consolidation process, nor to provide some relief in such a stringent scenario, with growth-enhancing measures only intended to be structural and long lasting and aiming at improving national competitiveness. Generally, the Second Adjustment Programme was not characterized by a change in economic approach but rather by a tiny recalibration of policy design, which confirmed austerity measures even though with some lower degree of tightness.

In 2013 economy provided signals of stabilization, with external current balance registering a surplus for the first time in several years and primary balance results overcoming the prefixed zero target, reaching the 0,8 percent of GDP. In the report of June 2014, IMF states than Greece had the highest cyclically-adjusted primary balance in the euro area, meaning that austerity policies eventually led to consistent fiscal results. However, no significant upswing was observed in internal demand, which had severely contracted from 2008 to 2013 (Figure 9) and only showed a mild and hiccupping growth from 2014 onward.

Figure 9: Domestic demand comparison (annual growth rate as percentage of GDP)



Source: OECD Data

Despite this, national competitiveness began improving with the Real Effective Exchange Rate (REER) considerably depreciating (from 100 in 2010 to 89.5 in 2015, WorldBank Data). Indeed, whereas fiscal adjustments mainly aimed at ensuring national sustainability in the long run, consistent economic recovery was expected to be enhanced by structural reforms addressing national competitiveness (which was posed at the center of the Second Adjustment Programme). The adopted labour and product market policies aimed at easing business activities, targeting rigidities and creating a more dynamic and efficient economic context.

A synoptic analysis of the Global Competitiveness Reports, published annually by the World Economic Forum, offers a valuable representation of the most relevant factors influencing the Greek business environment.

In particular, the analysis is based on the evaluation of the 12 pillars of competitiveness, divided between three indexes:

Basic requirements.

1. Institutions: It considers the institutional environment, determined by national legal and administrative framework within which economic agents operate;
2. Infrastructures: The level of quality and development of infrastructures (transport, telecommunications, etc.);
3. Macroeconomic stability: Is the parameter evaluating national soundness and its positive (or detrimental) effects on business activities through affecting interest rates, access to credit, inflation level and fostering (or limiting) government policies actuation;
4. Health and primary education: Measuring access and quality. A healthy and educated workforce is essential to support business development.

Efficiency enhancers.

5. Higher education and training: Measuring quality of secondary and tertiary education, which highly increase productivity of the workforce, allowing more complex tasks to be performed;
6. Goods market efficiency: Evaluating the level of competition within the market, the effectiveness of resources' allocation, of the tax system and of government intervention;
7. Labor market efficiency: Considering wages flexibility and meritocracy of the system, which create an attractive and dynamic labour market, contributing to an effective allocation of the labour force;
8. Financial market sophistication: Is the parameter determining trustworthiness and efficiency of the financial system, evaluating its ability in channeling economic resources to most profitable and functional investments;
9. Technological readiness: This pillar measures the permeability of the economy to technological progress and the ability to swiftly adopt innovations.
10. Market size: Evaluating the magnitude of internal demand and openness to international trade;

Innovation and sophistication factors.

11. Business sophistication: Measuring the overall quality of business networks and the quality of individual firms' operation and strategy;
12. Innovation: The level of investments (R&D) and the ability of public and private agents in creating and supporting innovation.

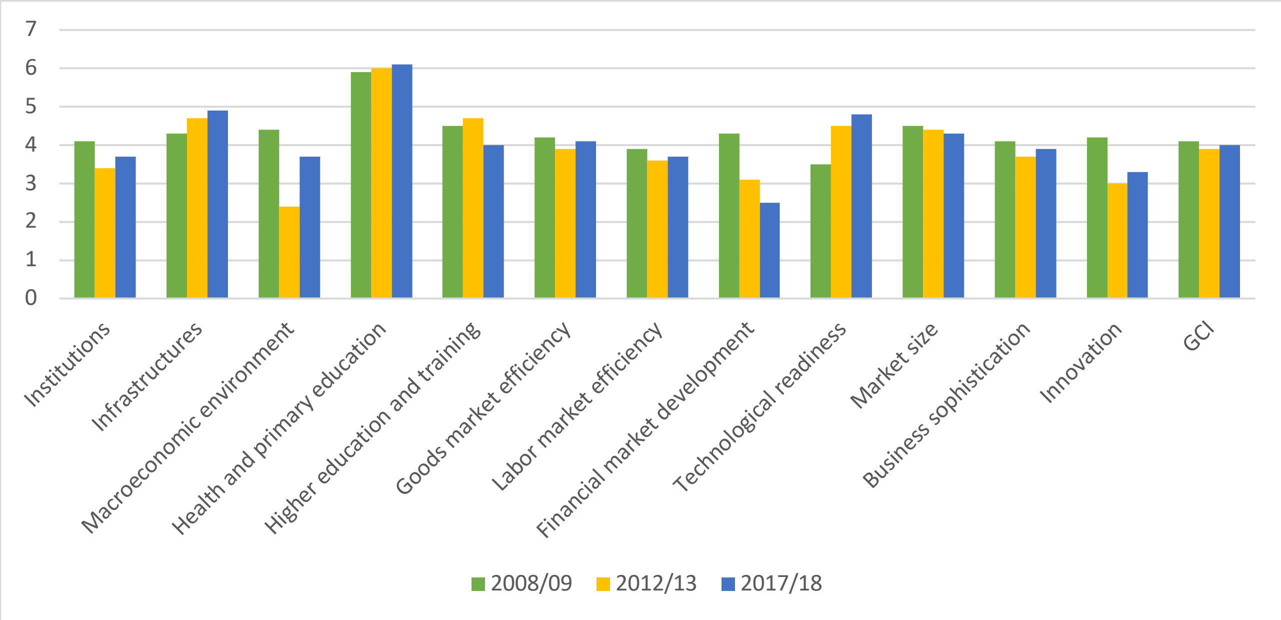
Pillars are interconnected and tend to reinforce (or weaken) each other, but their influence on countries' competitiveness depends on national economic development. Indeed, the computation of the Global Competitiveness Index takes into account weights attributed to sub-indexes according to the country's economic stage (with GDP per capita used as a proxy), as reported in *table 7.*

In particular, basic requirements are specifically relevant for factor-driven economies, characterized mainly by unskilled labour force, low productivity and low wages. As competitivity and productivity increase, wages rise as well, with country moving into the efficiency-driven stage of development. At this point, growth is led by the pursuing of efficiency, fostered by higher education. Eventually, the economy reaches the innovation-driven stage, characterized by high wages, with businesses focused on developing and providing new products and services (Greece belongs to this last category, presenting a 2008 GDP per capita of USD 32000).

Table 7: Sub-indexes' weights for stage of development

	Stage of development				
	Stage 1: Factor-driven	Transition: from S1 to S2	Stage 2: Efficiency-driven	Transition: from S2 to S3	Stage 3: Innovation-driven
GDP per capita (US$)	< 2000	2000-2999	3000-8999	9000-17000	> 17000
Weight for basic requirements sub-index	60%	40-60%	40%	20-40%	20%
Weight for efficiency enhancers sub-index	35%	35-50%	50%	50%	50%
Weights for innovation and sophistication driven factors	5%	5-10%	10%	10-30%	30%

Figure 10: The evolution of the Greek 12 pillars of competitiveness



Source: World Economic Forum

In the 2008 Competitiveness Report, the Hellenic Republic was marked with a 4,1 GCI, ranking 67th out of 134 countries. Greece had positive results in "health and primary education" sub-index (graded 5,9 and ranking 40th) as well as in "higher education and training" (graded 4,5 and ranking 38th) and in "market size" (4,5 and 33rd spot). On the other hand, it presented weakness in "labour market efficiency" (3,9 and 116th position) and a controversial position in "macroeconomic stability" (marked with an apparently satisfying 4,4 but only ranking as 106th). Not by chance, the last two pillars were the main fields of intervention after the crisis' deflagration.

Greek sub-indexes' synoptic evolution is represented in Figure 10.

Three reference periods have been chosen to offer respectively an ante-crisis benchmark (right before 2009 deflagration), a during-crises view (right after the PSI and the launch of the Second Adjustment Programme) and the latest post-programmes report, published in 2017/18.

A general analysis shows a global worsening of sub-indexes in the period 2012/13, with some recovery in 2017/18. However, a closer view provides some interesting details:

Macroeconomic stability and financial market sophistication were the most deteriorating parameters during the crisis, but whereas the former substantially recovered in the following years (thanks to consolidation measures), the latter went on degrading, certifying the general apprehension over and among Greek financial sector, low trustworthiness and resultant difficulties in access to credit. Market size was slightly but progressively ranked downward over the considered period, meaning that dimension and openness were not particularly harmed, but generally experienced some degrading.

The most controversial aspect is that the highly targeted and structurally reformed labor and product markets only showed some mild improvements. In particular, whereas some progress has been in wage flexibility and in easing business activities (i.e. by reducing bureaucracy), the two markets are negatively influenced by high taxation which disincentivize investments and work. Furthermore, Greece shows inability to attract and retain talented and highly-skilled workers, adversely affecting long run growth and competitiveness.
Lastly, consistent improvements in infrastructures and technological readiness (which show an apparently out of place upward trend) were mainly influenced by technological progress and by the expansion of broadband and mobile subscriptions.

The analysis on the pillars reinforces the idea that although the implementation fiscal adjustments consistently recomposed the accounting balances and long-term debt sustainability (public debt stopped increasing), growth-enhancing measures' results in the short/medium term have been unsatisfying (GDP growth rate has been modest and consistently below euro area average. Debt/GDP overcame 175 percent in 2013 and stabilized at this level).
In a personal interview released to the Greek journal Kathimerini in 2018, Stiglitz defines this situation as "normalization of poverty", stating that the economy has fallen so far that it is almost inconceivable for it to fall further, with devastating long run effects, and with young people leaving Greece to look for opportunities abroad.
Basically, after 5 years of collapsing, Greek economy stabilized and eventually stagnated.

Social disappointment towards lasting austerity policies led the Syriza party to the government at the beginning of 2015 with the aim of opposing to the austerity regime imposed by the Troika. However, the decision of rejecting bailout exiting terms by the neo-elected prime minister Tsipras, had detrimental effect on the financial sector of the country, throwing the country back in an uncertain scenario. The threat of "Grexit" materialized again and almost became a fact when the Greek referendum on new bailout terms resulted in a clear "No" (61% of voters) from Hellenic citizens.
Greece had never been so close at leaving the Eurozone, and such possibility raised different points among those who were against the strict policy imposed.
Stiglitz had supported the fight against austerity measures of the Syriza government from its establishment and admits: "I have been disappointed that they were not brave enough. I totally understand the fear of leaving the eurozone, but my view was in balancing the risks. If Greece had chosen to leave the currency, its economy would have gotten worse initially, but it would have recovered and done very well". The country would have necessarily defaulted but would have also

regained the chance of implementing autonomous and unilateral interest rates and monetary policies, subsequently spurring recovery. However, actual costs and outcomes in the long run could not have been predicted properly ex-ante.

Krugman states that Greece would be better off by exiting but highlights the possible adverse outcome: “Grexit would produce a rapid improvement in competitiveness at the cost of possible financial chaos”. Also, he lately added that this “won’t happen” since neither European Union, nor Tsipras’ government wanted to unveil such chaos.

Another Nobel Prize in Economics, Christopher Pissarides, provides a totally different perspective. In a personal interview to Kathimerini in 2017, he claims that consequences of Grexit would catastrophic for Greece. The low-competitive Greek economy would not be enhanced but rather buried by Grexit, leading to a clear devaluation of the new currency with respect to the euro: “real income would shrink dramatically. The national and private debt in euros would become much larger in the new drachmas and much more difficult to service. Deposits would lose at least half of their value”. The country would also fall in a severe financial crisis, with liquidity from ECB withdrawn and no other lender willing to provide credit, leading to credit crunch and causing widespread business bankruptcies and increased unemployment. “in the short term, any benefits of an independent exchange rate policy would evaporate under the weight of economic and political instability”.

The Grexit would have also raised questions about the monetary union as a whole, with several (detrimental) implications concerning the (disordered) procedure and the risk of a Greek default after two adjustment programmes.

But the government eventually retracted, Greece remained in the euro and a third programme was launched in August 2015, definitively closing the debate.

The new programme provided Greece with extra funding to ensure continued implementation of needed reforms and proceeded with no particular glitch. Social tension quietened even though general unsatisfaction remained latent.

In August 2018, Greece officially exited the last adjustment programme (See chapter 1.4). Total disbursement over the three bailouts amounts to EUR 336bn, whose majority (about 90%) was addressed to Greek debt service. Indeed, despite the huge amount to sustain national debt and deep cuts to spending, debt/GDP in 2018 is still above 170%. The crisis was quelled, European contagion was avoided, and Greece underwent a corrective and more sustainable path, but debt burden remained unchanged and economic and social costs were tremendously high.

Ex-post analysis highlights some mistakes and some questionable decisions in crisis' approach (i.e. a prompt debt restructuring), with the core of the discussion being the supposed strictness of austerity measures imposed to Greece.

Stournaras (2019) stated that the adjustment programmes have been bold, managing to correct several fiscal imbalances and laying foundations for economic recovery. Conversely, Lapavistas (2018) argued that the country will probably face low and precarious growth, characterized by high unemployment and persistent poverty.

The IMF had published policy advice concerning the proper pace at which government should correct fiscal imbalances and reduce debt levels, warning that a too slow adjustment would incite financial markets' agitation, while a too fast adjustment would drain economic recovery.

In one of the IMF's papers, Ostry, Loungani and Furceri support a strong and apparently controversial statement: "governments with ample fiscal space will do better by living with the debt". In particular, they emphasize how the burden of the debt is a sunk cost (having already been incurred) and that austerity policies generate a heavy welfare cost, affecting both demand and supply side, worsening the economy and rising unemployment. Furthermore, they strongly contrast Alesina's point (previously reported in the paper) according to which fiscal adjustments may be expansionary, highlighting instead that, in practice, fiscal correction has been usually followed by output contractions and rising inequality. The researchers' suggestion to highly indebted government was therefore to reduce debt ratio organically through economic growth.

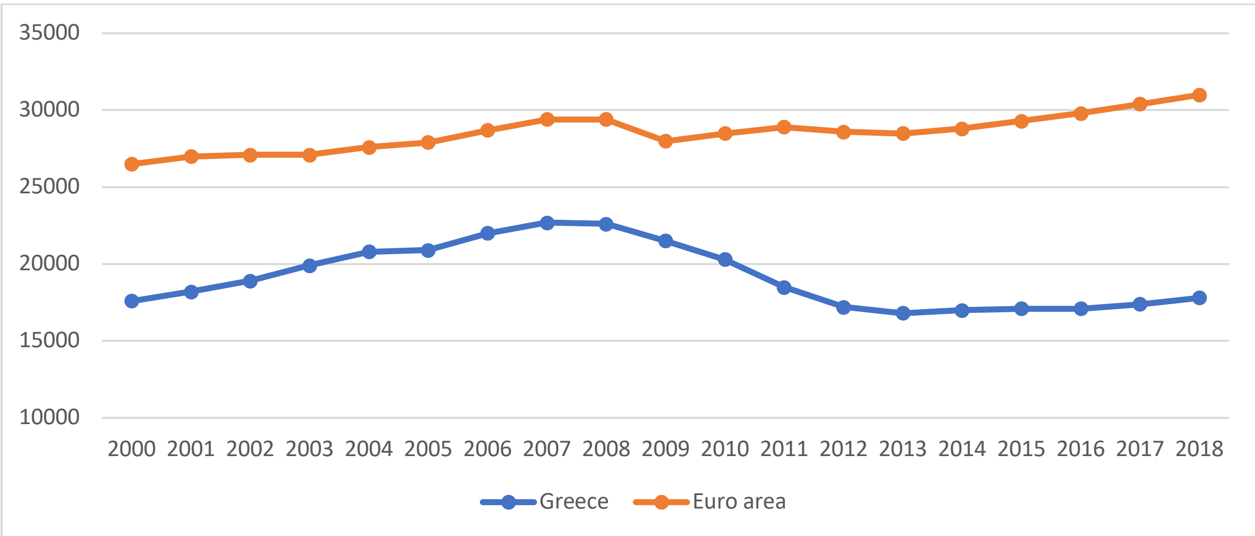
This line of thinking was furtherly confirmed in 2015, when the IMF officially suggested to euro area countries of investing consistently in order to strengthen the mild Community recovery, even at the cost of extra deficit.

Ex-post, this "organic line" appears to be the most consistent and functional approach in dealing with debt reduction. However, Greek debt crises deflagration led to a sudden collapse of the economic scenario, with great apprehension generated upon and within the EU. Imposing fiscal consolidation through austerity probably provided the safer option in a Community perspective.

Indeed, the implementation of such policies raised several concerns about programmes' future repercussions and lasting effects on Greece. Bailouts' social implications have been severely questioned, with stringent and constrictive measures imposing a reduction in living standards to the Greek people. EC states that policy has always been designed "to minimize impact on the most vulnerable strata of population", but it also admits that the burden for the less well-off ended up being heavier than forecasted and recognizes that future intervention aiming at correcting such imbalances would led to medium-term growth opportunities.

The constrictive effect of austerity measures on the economy, summed up to detrimental effect of the crisis, contributed to unemployment booming, creating a severe social issue. Pre-crisis level was around 8 percent and sharply grew since 2009, peaking 27,9 percent in July 2013 (youth unemployment almost reached 60 percent), and remaining constantly above 20% until mid-2018.
The Employment and Social Affairs committee of the European Parliament reported about 35,7% of Greek population living in situation at risk of poverty or social exclusion in 2015 (the highest in Europe) and warned that the scenario was not expected to improve in the short term due to gloomy economic forecasts. Middle class shrunk towards the poverty line and inequality spread. GDP per capita massively collapsed during the crisis (Figure 11), bringing the country two decades back in standards of living (2018 GDP per capita is comparable to 2000's level) and tremendously enlarging the gap with other euro area countries.

Figure 11: GDP per capita evolution (in euros)



Source: Eurostat

Many institutions showed some prick and concern about bailouts' social implications. The President of EC Juncker admitted that EU showed "lack of solidarity" in facing the Greek crisis. Even the at-the-time German minister of finance, W. Schäuble, who was one of the main advocates of austerity policies, admitted: "I would not have wanted to be forced to impose such reforms in Germany, politically it is not at all easy".

Despite positions on austerity measures of some of its representatives, the IMF played an important role in supporting and designing adjustment programmes (also being a member of the Troika). However, main responsibilities lie within EU and its institutions.

Ex-post, the European Union was not ready to face such a big crisis and had to progressively cope with its architectural inefficiencies and defects. In particular, the absence of agencies and procedures appointed to support troubling MSs was only lately covered through the creation of the EFSF and of the ESM, which eventually provided the programmes with greater soundness, also shielding more consistently against financial markets' turbulences.

The lack of fiscal risk-sharing arrangements compromised euro area's shock absorption capacity, and was consistently but only partially addressed by the above mentioned ESM and by the implementation of the banking union in 2014, with the design of the Single Supervisory Mechanism and of the Single Resolution Mechanism providing protocols to limit defaulting risk in the banking sector and to face possible turbulences. However, the banking union has to be furtherly strengthened. Negative spillovers from the troubling country were not effectively limited (exposing other European citizens) and Greek financial crisis was not effectively dammed (with severe consequences on the Greek people). In order to correct such weakness and consolidate the European banking union, the approval of the European Deposit Insurance Scheme proposed by the EC in 2015 should be quickened.

The EDIS builds up on a system of Deposit Guarantee Scheme (DGS) and would implement a more consistent level of insurance cover within the euro area, applying to all deposits below €100.000, and "ensuring that the level of depositor confidence in a bank does not depend on the bank's location" (EC), safeguarding all EU citizens and preventing bank runs in case of national financial distress.

In order to improve risk-sharing, the eurozone also requires efficient and integrated financial markets pursuing a single market for capital, and the implementation of a central fiscal stabilization function able to support national economic stabilizers during shocks (i.e. through unemployment benefit scheme) (ECB Economic Bulletin, 2018).

Moreover, the EU showed inability in enforcing fiscal rules and limited capacity in granting appropriate support. Stiglitz synthetizes these latter questions in the pursue of a balance between the mechanism of flexibility and the mechanism of harmonization, in the respect of an efficient and effective integration among Member States. The Union probably required (and requires) more political strength in order to reach and implement such "proper balance" among harmonization and flexibility, but this point transcends European inefficiencies and defects and directly questions the core of current Union's architecture, referring to the level of political strength and effectiveness that Member States actually want to recognize and delegate to the Union itself.

Conclusion

On a national level, the Greek crisis was the failure's manifestation of misleading and inconsistent national policies, based on overspending, with no concern for future sustainability and long run national wealth. Greece unequivocally had to intervene on its spending to adjust the structural inconsistences which had compromised national stability: pension system, labour and product market reforms were essential in order to restore national sustainability and competitiveness. Also, consistent results obtained in fiscal imbalances' correction and encouraging projection of debt reduction, lay foundation for a period of recovery and expansion. However, the strictness and duration of austerity imposed to Greece poses questions on Greek economic responsiveness: years of economic depression and following stagnation had created a consistent and widespread social issue, led to a tremendous brain-drain and capital outflow phenomena and generally to a tangible loss of confidence in and within the country as a whole.

On a European perspective the analysis is more controversial. On the one hand, EU managed to limit international contagion, to protect the monetary union and to avoid Grexit. On the other hand, it showed structural lacks and political unpreparedness. The strict austerity measures revealed to be effective in fiscal adjusting but detrimental on a social and economic point of view.

Considering ex-post the total financing of 336bn, the global duration of the programmes and the fact that debt/GDP has not declined yet (being still above 170 percent in 2018), time and funds could have been spent in a wider and comprehensive recovery plan, heading towards an organic debt reduction through investments and economic growth as well as through fiscal rebalancing, with the risk of the operation spread among Member States.

On the contrary, EU lacked sufficient political strength to channel (or push) MSs' intentions (being instead subject to national pressures) and to shield against financial markets apprehension and speculations. Debt crisis seemed to be dealt with the only aim of reducing defaulting risk, rather than on the view of re-enhancing growth, and main concern appeared to be avoiding European contagion, rather than supporting Greece. The country was indeed relegated to an "economic quarantine", which only ended when debt crisis eventually stabilized and the risk of contagion finally dissolved. The Hellenic Republic was precluded from any expansionary measure aiming at fostering and ensuring short-run economic improvement, in the interest of longer-term consolidation and sustainability.

Member States did not want to bear the risk of an ambitious plan for Greek recovery based on growth re-enhancing, and the cost of fiscal consolidation (built on expenditure cuts and long-term structural reforms) totally felt on the Hellenic people, with EU resulting as a detached notary rather than as a committed guarantor.

Therefore, a comprehensive evaluation of institutions' approach to the case remains controversial: whether it results generally positive on a Community level, managing to make it through the harshest crisis of European recent history, it turns quite negative when switching to national (Greek) level, with austerity policies correcting fiscal imbalance at the cost of wearing out Greece and no consistent sign of economic improvement registered so far. The only element able to partially straighten the concluding evaluation on a national level, would indeed be a sharp Greek recovery in the near future enhanced by the implemented structural measures (which seems unlikely from a today's perspective). However, despite further and eventual re-evaluation, the Greek debt crisis represented a watershed of European recent history. It also unveiled Community architectural and political fragilities, which must be addressed by Member States in order to ensure a more cohesive and efficient European Union.

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