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## **ΔΙΑΤΡΙΒΗ ΕΠΙΠΕΔΟΥ ΜΑΣΤΕΡ**

**The Sovereign Debt Crisis in the Euro Area:  
Causes, Consequences and Policy Responses**

**ΦΟΙΤΗΤΗΣ  
ΣΤΕΦΑΝΟΣ Β. ΜΠΟΛΟΜΥΤΗΣ**

**ΕΠΙΒΛΕΠΩΝ ΚΑΘΗΓΗΤΗΣ:  
ΚΑΘΗΓΗΤΗΣ ΠΑΝΑΓΙΩΤΗΣ ΑΛΕΞΑΚΗΣ**

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**The Sovereign Debt Crisis in the Euro Area: Causes,  
Consequences and Policy Responses**

by

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*“Dealing with a banking crisis was difficult enough, but at least there were public-sector balance sheets on to which the problems could be moved. Once you move into sovereign debt, there is no answer; there’s no backstop.”*

Mervyn King, Governor of the Bank of England



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## ABSTRACT

The ongoing crisis, as reflected in the turmoil reigning in the European sovereign bond market, threatens to undermine the stability of the Eurozone (EZ). The concerns of international investors and market participants regarding the public debt sustainability of specific euro area member states provided us with the stimulus for the present study. The scope of the thesis is to investigate and identify in detail the factors that gave rise to the current crisis and examine its effects on the capability of several national governments to keep on servicing their debt in a sustainable way. Furthermore, we track all the actions taken against the ensuing disorder in the financial sector, both at national political levels and in the form of supranational cooperation between institutional key-role players. We find that pre-existing macroeconomic imbalances that grew constantly over the years, massive private debt accumulation by households and corporations which fed a subsequent bubble in the construction and real estate sector, and the fiscal mismanagement operated by some national authorities are at the very core of the crisis. An additional key element with its own dynamic in fuelling the crisis is the deficient original scheme of the euro and of the EZ as an Optimum Currency Area (OCA), as the study indicates. We conclude by demonstrating that the mix of austerity policies and bail-out programmes which has been widely implemented cannot be the solution to the existing problem, unless it is followed by deeper political and fiscal integration among EZ member states and a more flexible monetary policy by the European Central Bank (ECB).

**Keywords:** sovereign debt crisis, sovereign spreads, trade imbalances, contagion, banking crisis, fiscal policy, Eurozone.

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*To our son, Vasilis*

## Introduction

Over the last three years many euro area member states have seen a dramatic increase in their 10-year government bond yields, which in turn has made their access to the international sovereign bond market an almost impossible task. The sharp rise in risk aversion that has ruled since then in the financial markets around the world and the swift deterioration of the fiscal situation in many euro area member states have engendered serious concerns about the sustainability of fiscal and external imbalances in many states of the EZ (Darvas et al., 2011; Fernandes and Mota, 2011; Gibson et al., 2012; Lane, 2012). The major Credit Rating Agencies (CRAs) established in the U.S. have started a series of downgrades of government debt in many European states, thereby destabilizing their economies even more and intensifying the crisis. (De Grauwe, 2010a). To make matters worse, a co-emerging banking crisis in the same period of time demanded immediate support from the public sector for a large number of failing banks across Europe (Candelon and Palm, 2010; Whelan, 2011; Cline, 2012; Mody and Sandri, 2012). Altogether, the very high debt burdens and the projected low growth prospects in the euro area<sup>1</sup> pose an ominous environment for the highly indebted nations concerning their ability to service their debt obligations. In this gloomy state of affairs the exit from the euro by the weakest members or even the viability of the common currency ceased to be taboo questions.

The political response to the two-front crisis has been combined action in the form of implementation of structural adjustment programmes aimed at reducing primary deficits and recovering lost competitiveness, bail-out agreements with the purpose of refinancing maturing debt and rescue packages in order to ensure the existence of many collapsing banks and therefore shield the banking sector, and an unconventional monetary policy, whose non-standard measures ensured uninterrupted liquidity provision to banks and the fall of the 10-year government bond spreads whenever they came nearer to escalate.

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<sup>1</sup> See International Monetary Fund's (IMF) World Economic Outlook (2012) at <http://www.imf.org/external/pubs/ft/weo/2012/01/pdf/text.pdf> and United Nations' LINK Global Economic Outlook (2012) at [http://www.un.org/en/development/desa/policy/proj\\_link/documents/geo201210.pdf](http://www.un.org/en/development/desa/policy/proj_link/documents/geo201210.pdf) for short-term prospects for the global economy in 2013-2014.

The main objective of the thesis is to highlight the underlying vulnerabilities of the economies in the affected countries and present a comprehensive approach to possible ways out of the crisis.

The results of our research indicate that it is of great importance that the euro area member states are willing to relinquish their sovereignty to a certain extent if that would accelerate political and fiscal integration in the EZ. Additionally, if the former were to be accompanied by a sort of mutualization of public debt in the EZ through the issuance of common Eurobonds it could drive back the lost confidence and remove the uncertainty currently prevailing among investors regarding the sovereign bond market (De Grauwe and Moesen, 2009; Gros and Micossi, 2009; De Grauwe, 2013).

The complexity of the European sovereign debt crisis and the particular characteristics of each different economy in the euro area make an in-depth analysis of each country affected separately an almost impossible task within the limited range of pages in this thesis. Another restricting factor is the new developments taking place on a very regular basis regarding the evolution of the crisis and the new plans the policymakers come up with in order to fight the crisis efficiently. On the other hand, this compels us to follow everyday developments very closely in order to be able to update our text accordingly and makes our task even more interesting and the writing a really captivating occupation.

We have extracted our data mainly by using the very recent scientific papers and publications available in scientific journals and on the Internet. We have also explored the database of the research part of leading international organisations such as the Eurostat of the European Commission (EC), the ECB, the IMF, the Organization for Economic Cooperation and Development (OECD) and the World Bank. In this way we have been able to collect many macroeconomic data series and statistical information which have helped us to observe and understand the evolution of the crisis.

Our study is organized as follows:

In Chapter 1, we initially look back at the decade following the introduction of the euro and we outline the major implications resulting from the introduction of the new currency. We then describe the financial and external imbalances observed among the euro area member states and the enormous credit expansion that took place in several member states of the euro area as corollaries of the arrival of the euro currency. The

ensuing banking crisis is described as well, and we finally indicate the imperfect design of the European Monetary Union (EMU) as the primary and foremost risk factor that laid the foundations for the future crisis. We also discuss the extent to which the CRAs and speculators are considered responsible for the negative development in spreads in the affected countries.

In Chapter 2 we describe how several states of the EZ, one by one, fell victim to their own vulnerabilities and found themselves caught up in the maelstrom of debt. Moreover, we consider in the same Chapter the contagion effect as an additional crisis transmission mechanism and we analyse the mutual action of the most important key players during the sovereign debt crisis in the euro area.

In Chapter 3 we present our critical consideration of the crisis management exercised as such so far and we comment on policy implications by looking at how the present crisis can be more effectively confronted.

Finally, Chapter 4 concludes.

# Chapter 1: The Pre-Crisis Period: The Risk Factors

## 1.1. The arrival of the euro and the implications of the new currency

It has been over a decade since the euro was introduced into our lives. Yet a non-financial ideal, the idea of a Europe as a community, in which people would share common cultural, social and political beliefs and identify themselves primarily as Europeans and not only as citizens of their own country, was the one that constituted the very seed which grew and gave life to a Europe without borders and allowed the vision of a common currency to arise. The very early and premature form of the idea of a unified Europe dates back to the end of the 18<sup>th</sup> century. Since then and over the centuries, Europe has seen a period of cultural and political integration. Tragically, the most important driving force for deeper European integration was the memory of one of the darkest pages in world history, that of World War II. That awful memory and the belief that such conflict should never happen again revived the call for more European integration and strengthened the movement for the unification of Europe, which aimed for political unity and establishment of a long-lasting peace. Neither a common currency nor financial union were objectives at that time. Today's European Union (EU) is the result of a long process, during which the European Coal and Steel Community (ECSC), founded in 1951, was gradually transformed into the European Economic Community (EEC) and eventually led to the creation of a single European market, the EU and the euro (Schwab, 2012).

The official arrival of the euro as an accounting unit in 1999 was the final phase of the third stage of a monetary integration process<sup>2</sup>, as defined in the Maastricht Treaty<sup>3</sup>. The ultimate objective of this process was to safeguard the proper function and credibility of the future EMU, a basic step towards what was a smooth and unproblematic transition to the new currency. Accordingly, certain criteria for economic convergence - in terms of price and exchange rate stability, convergence of interest rates and budgetary balance - were agreed on in Maastricht among the EU members, which along with the self-commitment of all key players in the EMU would

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<sup>2</sup> During the first stage (1990-94) some technical requirements (capital movements, Central Bank legislation) had to be met, while the second stage was dedicated to the strengthening of the economic policy convergence between the members and the establishment of the European Monetary Institute (EMI) as a monitoring body.

<sup>3</sup> For further information and the full text of the Treaty of Maastricht see: <http://eur-lex.europa.eu/en/treaties/dat/11992M/htm/11992M.html>



guarantee members' economic homogeneity and consistency before the introduction of the currency, and internal stability of the EZ afterwards. While ECB is mainly responsible for the maintenance of the price and exchange rate stability and the convergence of interest rates, the responsibility for economic policy and balanced budgets has remained within the competence of national governments. National budget deficits are not allowed to exceed 3 per cent of Gross Domestic Product (GDP) and overall indebtedness is not allowed to exceed 60 per cent of GDP<sup>4</sup>.

To this effect, the Amsterdam Treaty of 1997<sup>5</sup> contained a political pact, the so-called "Stability and Growth Pact" (SGP), tied to the convergence criteria already agreed on in Maastricht, the key issues of which are not the convergence criteria itself, but certain obligations to be met by the member countries, by the EC and by the European Council<sup>6</sup>. The member countries committed themselves to a balanced budget or a budget surplus in the medium run and to taking all the necessary steps to reach this goal. The EC has to report on risks of excessive deficits in member countries and – generally – has to facilitate the strict, timely and effective functioning of the pact. Lastly the Council is committed to rigorous and timely implementation of all elements of the Pact, especially if certain convergence criteria are violated<sup>7</sup> (Buti, 2003; Exenberger, 2004; Tanzi, 2004).

In 1999, eleven EU member states<sup>8</sup> welcomed the euro as their new official common currency. Its establishment and introduction had been determined seven years earlier by the provisions of the Maastricht Treaty in 1992. With the exchange rates of the old national currencies of the participating countries decided in the fall of 1998 and locked at fixed rates against one another, the new currency served for accounting purposes and cashless payments, such as electronic transfers, in non-physical form during the first three years following its launch, until the introduction of euro notes and coins in 1 January 2002. In the meanwhile, a twelfth country, Greece, had gained the right to enter the EZ in 2001. Since then, the euro has been circulating in physical form, as it replaced, at fixed conversion rates, the banknotes and coins of the national currencies

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<sup>4</sup> See <http://www.ecb.europa.eu/pub/pdf/other/10thanniversaryoftheecbmb200806en.pdf>

<sup>5</sup> See <http://eur-lex.europa.eu/en/treaties/dat/11997D/hm/11997D.html>

<sup>6</sup> For the Resolution of the European Council on the SGP see: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CELEX:31997Y0802%2801%29:EN:HTML>.

<sup>7</sup> See also [http://ec.europa.eu/economy\\_finance/economic\\_governance/sgp/index\\_en.htm](http://ec.europa.eu/economy_finance/economic_governance/sgp/index_en.htm)

<sup>8</sup> Austria, Belgium, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain.

of the member states. Five more countries joined the membership the course of time<sup>9</sup>, resulting in an expansion of the euro area into a monetary union of seventeen countries<sup>10</sup>.

Table 1 below shows the irrevocable conversion rates between the old currencies and the euro, as determined by the European Council of the EU based on a recommendation from the EC, in turn based on the market rates on 31 December 1998 and set so that one European Currency Unit (ECU) would equal one euro<sup>11</sup>:

**Table 1: Fixed euro conversion rates**

€ Currency	€ Currency
1 BEF 40.3399 (Belgian francs)	1 LUF 40.3399 (Luxembourg francs)
1 DEM 1.95583 (Deutsche Mark)	1 MTL 0.429300 (Maltese lira)
1 EEK 15.6466 (Estonian kroon)	1 NLG 2.20371 (Dutch guilders)
1 IEP 0.787564 (Irish pound)	1 ATS 13.7603 (Austrian schillings)
1 GRD 340.750 (Greek drachmas)	1 PTE 200.482 (Portuguese escudos)
1 ESP 166.386 (Spanish pesetas)	1 SIT 239.640 (Slovenian tolar)
1 CYP 0.585274 (Cyprus pound)	1 SKK 30.1260 (Slovak koruna)
1 FRF 6.55957 (French francs)	1 FIM 5.94573 (Finnish markkas)
1 ITL 1936.27 (Italian lire)	

Source: European Central Bank

The creation of the euro is regarded as a major event. Salvatore (2002) characterizes it as one of the most important events in post-war monetary history, giving emphasis to the voluntary relinquishment of their own currencies by a large group of sovereign nations in favour of a new currency.

The presence of the euro had some major consequences for the member nations. The most important aftermath of the introduction of the new currency and the demise of the old currencies was the abolishment of the privilege of issuing money by the national central banks and the loss of the ability to set their own monetary policy; national governments could no longer print money to pay off their debts (Gianviti et

<sup>9</sup> Slovenia (2007), Cyprus and Malta (2008), Slovakia (2009) and Estonia (2011).

<sup>10</sup> See <https://www.ecb.int/euro/intro/html/index.en.html> and [http://ec.europa.eu/economy\\_finance/euro/](http://ec.europa.eu/economy_finance/euro/)

<sup>11</sup> See Council Regulation (EC) No 2866/98 of 31 December 1998 at <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:1998R2866:20080101:EN:PDF>

al., 2010, De Grauwe, 2012; Gibson et al., 2012). Without the facility to change the nominal exchange rate of their own currencies, member states no longer had the option of national currency devaluations, a traditional mechanism for adjustment between national economies was therefore eliminated, since they were no longer able to make their goods and services cheaper and more competitive on international markets through the currency devaluation process (Armingeon and Baccaro, 2012b; De Grauwe, 2012; Lane, 2012). This also meant that the significance of national fiscal policies as an instrument for countercyclical macroeconomic policy increased even further. At the same time, the costs related to a potential banking crisis<sup>12</sup> were still for the individual governments to shoulder, since no significant step towards banking union or fiscal union had been taken (Lane, 2012).

The loss of monetary autonomy and the ensuing absence of control capability over macroeconomic management represent the typical price a state has to pay when entering a monetary union. In the case of the EMU each member state had high expectations that the benefits of joining the euro area would be of far more significance than the costs and thus outweigh possible disadvantages<sup>13</sup> (De Grauwe, 2012).

Tavlas (2004) addresses the question of the benefits and costs of entering the EU and emphasizes exchange risk elimination and trade facilitation in goods and services and financial exchanges, which both are direct effects of the existence of the single currency, as well as the greater savings in transactions costs associated with the use of a single currency. He also stresses the elimination of exchange rate uncertainty, which hampers trade and investment, supporting the theory that the single market leads to a substantial rise in trade among its members. Furthermore, the existence of a single currency enhances the role of money as an accounting unit and eliminates currency conversion transaction costs. Another major benefit of participating in the EMU is the credibility arising from the eradication of inflationary financing of deficits and debts, since no participating country can monetize budget deficits and debts any more. This in turn leads to low and stable inflation and inflation expectations, and elimination of nominal interest rate differentials between the participating countries. When the fact

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<sup>12</sup> Bank recapitalization costs or other forms of fiscal support and indirect fiscal costs since GDP and tax revenues tend to remain low for a sustained period in the aftermath of a banking crisis (Lane, 2012).

<sup>13</sup> Mundell (1961), McKinnon (1963) and Kennen (1969) suggest the condition for a formation of an OCA, as well as the potential costs and benefits for the participating countries. We discuss by providing a critical approach in another section of our thesis as to what extent EMU forms an OCA.

that there can be no exchange rate crises among the economies of the participating countries and no devaluation risk either is also taken into account, then the credibility gained by participating in the EMU is translated into a potential investment boom and great growth promotion. Finally, there are political benefits through membership of a monetary union in that its members can negotiate with outside associates as a whole and not individually, hence they can be more influential.

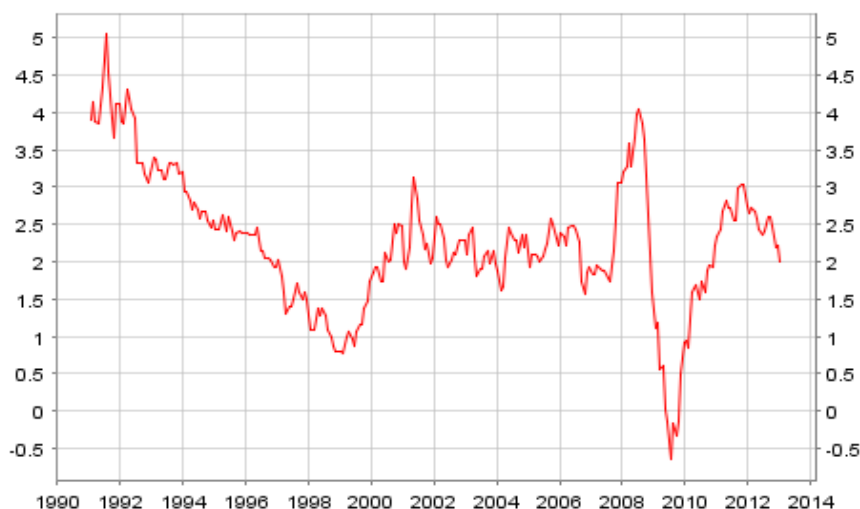
Similarly, according to Gibson et al., (2012) the way EMU participant countries benefited from their membership can be summarized as follows:

- 1) The monetary policy and the credibility of the ECB lowered inflation and inflation expectations, minimizing the uncertainty created by inflation instability.
- 2) Private investment and economic growth were stimulated by the encouragement of borrowing and lending at longer maturities as a result of the elongation of economic horizons due to the low inflation environment and the associated declines in inflation expectations and nominal interest rates.
- 3) The euro reduced exchange-rate uncertainty and risk premia since it put an end to exchange-rate fluctuations and removed the option of competitive devaluations among participating countries.
- 4) The fall in risk premia and the reduction of nominal interest rates made the costs of public-sector debt servicing significantly lower, releasing resources for other uses and enabling a smooth fiscal adjustment.

Although he praises the currency stability brought by the euro, Schwab (2012) regards the removal of the devaluation tool from the hands of politicians, who wanted an easy fix and refused to implement structural reforms, as the most important consequence. In this new reality, policy makers at economic level in different countries could much more easily implement free market principles, since decisions adopted thereafter were centralized, thus promoting the flexibility and productivity of the economy. He also sees the euro as achieving great success at microeconomic level, proposing the example of thriving and profitable European multinationals, which have been able to invest and make high profits abroad far more and in more countries, especially in emerging markets, than their American and Japanese competitors.

In Chart 1 and Table 2 we can see how price stability was achieved after the introduction of the euro, where the average inflation rate was very close to the target of 2% as manifested by the ECB:

**Chart 1: Harmonized Index Consumer Prices (HICP) in the euro area (changing composition, annual rate of change)**



Source: European Central Bank

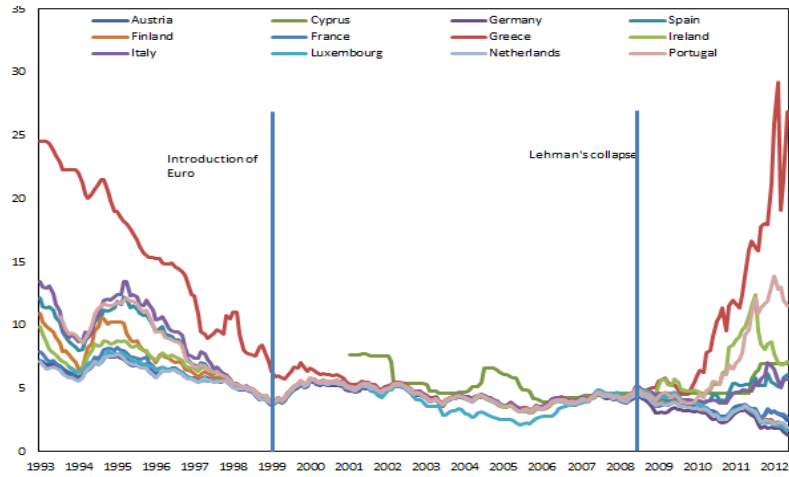
**Table 2: Sixty years of inflation: ten-year annual averages**

	1949-58	1959-68	1969-78	1979-88	1989-98	1999-08
Austria	8.9	3.1	6.0	4.0	2.6	1.9
Belgium	1.4	2.4	7.1	5.0	2.3	2.0
Finland	6.1	5.0	9.9	7.4	2.7	1.7
France	6.2	3.8	8.4	8.1	2.2	1.7
Germany	1.1	2.3	4.7	3.0	2.7	1.6
Greece	7.7	1.9	10.7	20.0	12.2	3.2
Ireland	4.0	3.3	12.2	10.3	2.6	3.7
Italy	3.1	3.4	11.1	12.0	4.6	2.3
Luxemburg	2.6	2.0	6.3	4.8	2.5	2.4
Netherlands	4.1	3.5	7.4	3.2	2.3	2.2
Portugal	0.8	3.4	15.5	18.7	7.0	2.9
Spain	6.1	6.3	13.0	11.1	4.7	3.2
Denmark	4.0	5.2	8.7	7.4	2.3	2.1
Sweden	4.4	3.6	8.1	8.0	3.9	1.2
Switzerland	1.1	2.8	4.9	3.3	2.6	0.9
UK	3.8	3.1	11.8	8.0	4.3	2.7

Source: European Central Bank

In Chart 2 we observe the sharp decline of the 10-year government bond yields in relation to the euro area member states over the last twenty years:

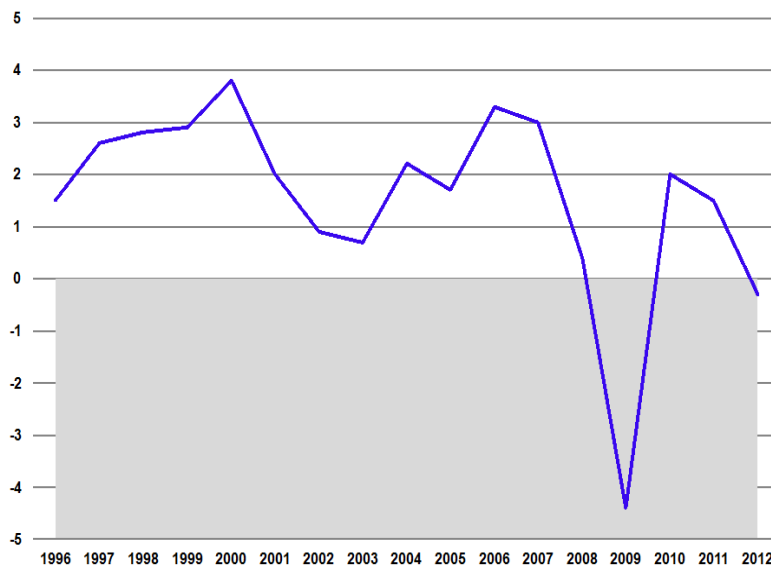
**Chart 2: Euro area 10-year government bond yields (%)**



Source: European Central Bank

In Chart 3 the real GDP growth rate in the EZ is portrayed:

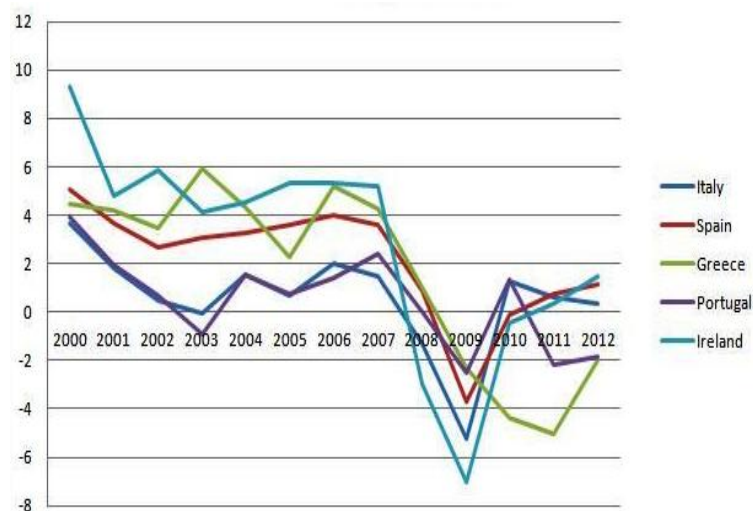
**Chart 3: Euro area (17 countries) real GDP growth rate (%)**



Source: Eurostat

The GDP growth of the overindebted euro area member states is shown in Chart 4:

**Chart 4: GDP growth, 2000-2011**



Source: International Monetary Fund

The end of 2011 finds the combined GDP in nominal terms of the 27 EU member states (USD 17.6 trillion) higher than that of the United States (US) (USD 15.1 trillion) and China (USD 7.3 trillion). What is more, the EU represents the world's second largest exporter and importer, with 20% of world trade, after China and the US respectively, and enjoys high labour productivity, indeed one of the highest in the world. All in all, a common currency in a united Europe granted more prosperity to the entire continent and a better quality of life to the Europeans (Schwab, 2012).

However, the same currency, which served as the fundamental instrument for great EU success in the world markets, has been accused by many of being a part of the European debt problem itself, and its architecture of being one of the driving forces that led to the ongoing sovereign debt crisis that plagues the EZ.

## **1.2. The dynamics of private debt and the banking crisis**

Being part of the monetary union had many advantages (see 1.1). However, although the entry into the EZ marked for many economies a period of low inflation, strong growth and an ambitious financial environment, increased macroeconomic, financial and fiscal vulnerabilities were growing alongside the good growth performance and waiting to come to the surface (Lane, 2012).

The fall in and the subsequent convergence of the interest rate spreads and the low interest rate environment which followed and predominated in the years after the creation of the EMU formed a background in which the foundation was laid for future high debt accumulation by households and corporations. Indeed, a strong domestic credit boom took place in the peripheral European countries throughout these years. The formation of a single and fully integrated market in banking and financial services and the elimination of exchange rate risk after joining the EMU gave banks within the European periphery the ability to raise funds in the new common currency much more easily and at significantly lower cost than before. The lower interest rates and the easier availability of credit stimulated consumption-related and property-related borrowing. (Lane, 2012; Lin and Treichel, 2012).

Financial integration caused a significant increase in cross-border capital flows, with claims by core countries on non-core countries' banking systems dominating the increase. Lending by German and French banks to non-core countries' banks was by far the main reason for this increase. All this lending from core banks to non-core banks, reinforced by very low borrowing costs and easy access to liquidity, set in motion a real profusion of capital flows throughout Europe, a reality which offered an illusionary sense of prosperity in a low-risk environment since there was no exchange rate risk (Lin and Treichel, 2012). Sinn (2010) identifies this absence of the exchange rate risk for investments in countries with low competitiveness within the EMU as a key factor which resulted in an excessive flow of capital to risky projects in non-competitive countries.

In the same way, Bank et al. (2011) find a clear connection between undifferentiated interest rates, mispricing of bonds and misallocation of capital, which leads to too much capital allocation in risky investment projects and too little capital allocation in low risk investments<sup>14</sup>.

In his effort to explore the role of financial openness in the euro area crisis, Ersoy (2012) finds that the foreign liabilities of Southern Europe increased by almost 70% between 1999 and 2009 due to the financial flows within the euro area. The capital flows to these countries - mainly from Germany - caused real interest rates to decline and this boosted credit growth, government spending, debt accumulation and current

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<sup>14</sup> Since interest rates are an indication of the related risk of a credit and provide the necessary motivations for the decisions of debtors and creditors, then investors will get completely incorrect signals from the capital market if there are no differences in interest rates (Bank et al., 2011).



account deficits as some of these countries started to spend beyond their means. The public debt accumulated in Greece was due mainly to mismanagement of public finances, but the private debt accumulations in countries like Spain and Ireland were due to construction and housing booms (De Grauwe, 2010a and 2010b; Armington and Baccaro, 2012b). In Spain and Ireland, in particular, the cheap credit that came to finance real-estate investments and rapidly rising housing prices eventually the creation of a huge bubble in the real-estate sector (Scharpf, 2011; Lane, 2012).

Credit-financed domestic demand also arose in Greece and Portugal as a consequence of the cheap capital, a domestic demand which was amplified by wage increases beyond the average increases in the rest of the euro area due to the expansionary fiscal policy and government spending in these countries (Giavazzi and Spaventa, 2010; Featherstone, 2011; Gibson et al., 2012).

Table 3 shows the evolution of credit/GDP ratios for seven EZ countries and clearly illustrates the strong credit booms experienced in peripheral European countries:

**Table 3: Private credit dynamics**

<i>Loans to private sector from domestic banks and other credit institutions (% of GDP)</i>			
	1998	2002	2007
Greece	31.8	56.5	84.4
Ireland	81.2	104.4	184.3
Portugal	92.1	136.5	159.8
Spain	80.8	100.1	168.5
Italy	55.7	77.3	96.5
Germany	112.2	116.7	105.1
France	81.0	85.6	99.3

Source: Lane, 2012

Altogether, private debt in the euro area as a percentage of GDP has increased from about 55% in 2000 to about 70% in 2008. This rising level of private debt, initially originating from the very low interest rates arising from the existence of the euro, was accelerated by the deregulation of banking services and the liberalization of existing financial activities. Another factor that contributed to the accumulation of private debt

was the expansionary common monetary policy up until 2006. This period of euphoria led people to believe that high real growth would guarantee sustainable debt limits, no matter how high these would be. Consequently, a bubble formed in the assets market, and, in the absence of a common supervisory and regulatory authority, grew very quickly and finally burst. (De Grauwe, 2009; Acocella, 2011). The dynamics of private debt are strongly interrelated with those of public debt and the former has fuelled the later to some extent, insofar as many countries had to guarantee the viability of their collapsing banks or even recapitalize their whole banking system from one side and then had to witness a quick drop in government revenues along with an increase in social welfare payments due to the collapse of the construction sector from the other side<sup>15</sup> (Bohle, 2010; Lane, 2011; Whelan, 2011; Mody and Sandri, 2012).

Alessandrini et al. (2012) describe very successfully what happens in a period of recession and if the private sector carries too much debt at the same time; it will be the first to deleverage – creating a banking crisis because savings rise to reduce that debt. This causes a loss of liquidity in the banking system and a potential banking crisis, which leads to even larger fiscal deficits to rebalance economic activity and to replace savings in banks. At that point, excess private debt becomes excess public debt. Demand for assets/bonds in problem countries will collapse, especially in a currency union like the euro area where asset sales can be sent to low-risk countries [Germany, Finland, or the Netherlands] without cost or exchange rate risk. Government bonds in the problem countries are then no longer capital risk free, especially if a bailout looks unlikely or insufficient.

In their study on the relationship of banking to debt crisis in Europe, Candelon and Palm (2010) explore and identify the types of linkages which can be established and can generate potential transformation of banking crises into sovereign debt crises. An increase in public deficits takes place after a banking crisis, due to the reaction of governments in the form of expensive safety plans. Governments can also provide guarantees to commercial banks through off balance sheet operations<sup>16</sup>. Furthermore,

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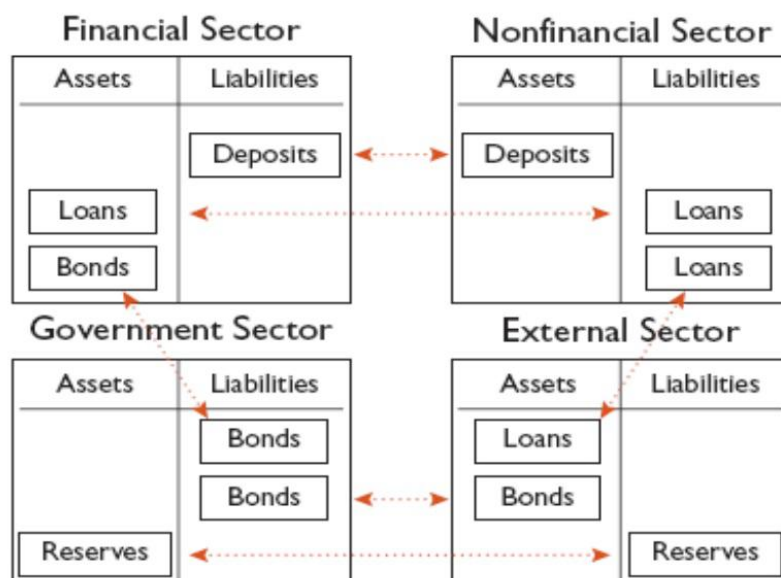
<sup>15</sup> The tax base of certain countries (e.g. Ireland) was modified during the boom periods to collect more and more tax revenue from construction activity and the share of tax revenue due to asset-based taxes rose steadily. So the large loss in income and asset-driven tax revenue was inevitable after the collapse in construction activity, since a substantial source of government revenue disappeared almost overnight (Lane, 2011; Whelan, 2011).

<sup>16</sup> In this case, there is no direct liquidity provision, but still sovereign debt runs the risk of higher risk premium in case of a potential exercise of this guarantees (Candelon and Palm, 2010).

there are consequences associated with the banking crisis such as higher unemployment, which have a negative effect on tax revenues, causing them to rise and at the same time bringing about an increase in government spending through the expansion of unemployment benefits and through measures aimed at stimulation of total demand. Therefore, the debt increases due to the deepening of the budget deficit caused by the function of the automatic stabilizer mechanism described above. In this instance, a restrictive fiscal policy would lead many households to default and thus in turn would result in a further deterioration of the banks' balance sheet, since many more loans would then become non-performing.

In the same study, they employ a Balance Sheet Approach (BSA)<sup>17</sup> as a tool to graphically present the interconnectedness characterizing the different sectors of the economy, and how a shock to the balance sheet of a specific sector will have an effect on the others. Figure 1 shows the sectors acting in the economy and the potential connections between them:

**Figure 1: Balance Sheet Approach**



Source: Candelon and Palm, 2010

<sup>17</sup> For an extensive and analytical examination of the balance sheet approach see Allen et al. (2002) and Rosenberg et al. (2005).

It is clear that any shock to a specific balance sheet will have an effect on the others. When real estate prices fall sharply, signalling a deterioration of the non-financial balance sheet, then the ensuing insolvency of households affects the financial sector balance sheet through the bank losses that follow, as well as the government balance sheet because of the significantly lower tax income<sup>18</sup>. By the same token, a weakening of the financial sector balance sheet caused by a banking crisis will eventually hit the government balance sheet via a decrease in the demand for government bonds. In conclusion, the BSA sets a clear example of how a potential weakness of the financial sector balance sheet because of the shrinkage of its asset part fosters the mutation of the banking crisis to a sovereign debt crisis. It leads to a lower demand for public bonds, forcing government to massively enter the foreign bond markets, thereby deteriorating their external debt position. For a member of the euro area countries, a deterioration of the debt position would lead to pay a higher risk (default) premium.

Turbulence in the financial sector thus has serious consequences for a mutation of a banking crisis into a sovereign debt crisis. What usually happens, as Reinhart and Rogoff (2009 and 2010) document, is that economic activity collapses and stagnates for a certain period of time after a banking crisis, and private debt shrinks significantly while sovereign debt rises. The deleveraging mechanism is a standard process employed by banks when the asset part faces big losses, especially when at the same time they have to meet the requirements regarding higher capital adequacy ratios. In that case, cutting back on the asset part is the simplest solution to the twin problem (Bofinger, 2012).

Similarly, Acharya et al. (2011) also distinguish a very important relationship between sovereign and bank credit risk, focused on in their study of the effects of bank bailout packages on sovereign debt viability. They find that the financial sector bailout and the sovereign credit risk are very closely linked and that the bank bailouts that took place in the EZ generated sovereign credit risk by transferring the default risk from the banking sector to the sovereign. But, in turn, sovereign credit risk affected bank credit risk, so that a sort of “crisis spiral” mechanism operated. Although a bailout copes with the under-investment problem of the financial sector, it

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<sup>18</sup> Firm insolvency contributes also to a significant degree to the reduced tax income.

however sets restrictions in and has a suspensory effect on the non-financial sectors' incentives to invest, as its funding occurs through taxation of their future profits.

This can adversely affect the sovereign's own credit risk which severely limits the size of the efficient bailout. In the short run, the bailout is funded through issuance of government bonds, which erodes the value of existing bonds, including those held by the financial sector. The appearance of meaningful sovereign credit risk right around the bank bailout packages is a reflection of the future taxation (or inflation) risk imposed on corporate and household sectors of the economy and represents an important immediate cost of the bailout.

The main conclusion of their study is that aggressive bailout packages<sup>19</sup> that act in a stabilizing way on financial sectors in the short run but overlook the eventually high taxpayer cost might end up being a "Pyrrhic victory".

Table 4 below shows the amount spent on safety plans by European countries:

**Table 4: Financial sector fiscal costs in % of GDP**

Country	Capital injections	Purchase of assets and lending by Treasury	Central Bank support provided with Treasury baking	Liquidity provision by Central Bank	Guarantees
France	1.2	1.3	0.0	0.0	16.4
Germany	3.7	0.4	0.0	0.0	17.6
Italy	1.3	0.0	0.0	2.5	0.0
Netherlands	3.4	2.8	0.0	0.0	33.7
Spain	0.0	4.6	0.0	0.0	18.3
U.K.	3.5	13.8	12.9	0.0	17.4

Source: Candelon and Palm, 2010

In a detailed analysis of the evolution of the banking crisis in the EA and its transformation into a sovereign debt crisis, Mody and Sandri (2012) distinguish three separate phases. The first one lasted from July 2007 through to the rescue of Bear Stearns in March 2008, the second one from Bear Stearns through to January 2009 when Anglo Irish was nationalized and the last one, which started after the Anglo

<sup>19</sup> The main problem posed by those kinds of bailouts, in the writers' opinion, is that of moral hazard, that is, the distortion of future financial sector incentives. Mody and Sandri (2012) seem to believe the same, as they note that such bailout policies targeting supporting the financial sector carried the risk of perpetuating the incentives of bankers to behave irresponsibly in the future.

Irish rescue and during which the crisis evolved into its full-blown phase was characterized by highly intertwined financial and sovereign shocks<sup>20</sup>. Exactly in that phase, not only did financial sector stress raise sovereign spreads as before, but sovereign weakness also transmitted to the financial sector. Sovereign spreads tended to rise with the growing demand for support by weakening domestic financial sectors, especially in countries with lower growth prospects and higher debt burdens. Finally, sovereign spreads, the health of the financial sector, and growth prospects supported a mutually reinforcing regime, under the driving force of which the financial sector ceased to be the clear driver of the crisis. Rather, the crisis took on a larger scope involving fiscal and competitiveness problems. Fiscal problems, in turn, had knock-on effects. Higher sovereign spreads increased the borrowing costs of domestic banks and generated capital losses on holdings of public debt, contributing to lower growth. Nevertheless, despite the costly rescue packages and the side-effects on the public debt, they suggest that stabilization of the financial sector through prompt action should be a priority, since delays are even costlier, and that fiscal costs for strengthening banks can pay off through higher growth.

Table 5 captures the degree of several banks' exposure to sovereign debt in the euro area:

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<sup>20</sup> The writers provide a clear view of a vicious circle developing in their analysis: A weak financial sector decelerates growth and causes the public debt-to-GDP ratio to rise. When the government interferes, then the recapitalization costs of the banks have a negative effect on its fiscal credibility. At that time, shocks from the financial sector have been transmitted to the government, and at the same time the even higher debt burden undermines even more the prospects of the financial sector. The econometric model used in their analysis finds evidence of much more adverse effects caused by financial sector shocks in sovereign spreads in countries with a slower growth potential, and of financial shocks also having a higher impact on countries with higher public debt ratios.

**Table 5: Exposure of selected banks to the Euro area crisis**

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	euros (billion)
<u>Germany (mostly exposure to Italy)</u>	
Commerzbank	10.9
Deutsche Bank	6.6
DZ	6.6
Hypo	10.0
<u>France (mostly exposure to Italy)</u>	
BNP	14.9
Credit Agricole	4.5
Societe Generale	3.0
<u>Italy (mostly domestic exposure)</u>	
Sienna	28.4
Bance popolare	11.4
Intesa SanPaolo	70.9
Unicredit	49.9
UBI Banca	17.5
<u>UK (mostly exposure to Italy and Spain)</u>	
Barclays	6.3
HSBC	1.5
Lloyds	0.02
RBS	0.06
<u>Spain (almost all domestic exposure)</u>	
BBVA	56.5
Santander	57.3
Barcelona	26.7
Banco Popular	15.6

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Source: Schwab, 2012

### **1.3. Fiscal indiscipline and macroeconomic imbalances**

A striking and very unpleasant reality that established itself during the years following the introduction of the euro was the occurrence of increased and tenacious current account imbalances across the euro area, as a consequence of large and growing financial and macroeconomic imbalances, which proved unsustainable for Southern European countries. (Uxo et al., 2011; Lane, 2012).

Lane (2012) claims that to the extent that current account imbalances speeded up income convergence by transferring resources from capital-abundant high-income to capital-scarce low-income countries, this would be a positive gain from monetary union. By the same token, Barnes et al. (2010) argue that euro area current account imbalances could be interpreted as a form of greater financial and goods market

integration, leading to deficits in countries with higher growth prospects and surpluses in the more mature economies<sup>21</sup>. Persistent current account deficits are thus a physiological effect of their catching up process (Giavazzi and Spaventa, 2011).

However, a current account deficit can be dangerous if intensified spending on non-tradables compresses the tradables sector by bidding up wages and keeping resources away from industries that have more room for productivity growth. This means that if capital inflows tend to power investment in capital that has little influence on future productivity growth and hinder adjustment to structural shocks, then the build-up of external imbalances represents substantial macroeconomic risks (Blanchard, 2007; Lane, 2012). Similar risks are also identified by Alessandrini et al. (2012) in the case of a boom of imported financing channelled to the non-tradable residential sector, or to consumption, because it feeds unsustainable growth since the solvency conditions cannot be satisfied<sup>22</sup>. Thus, those imbalances once considered the natural side effect of a healthy process of convergence, now instead come to be considered as symptoms of future sovereign insolvency and indicators of the inherent fragility of the whole single currency project (Giavazzi and Spaventa, 2010).

The Northern European members of the EZ, the economies of which are mainly driven by and rely on exports and which have applied policies to promote such export-led growth, have managed to run large current account surpluses. By contrast, the Southern European countries, whose exports were less competitive and which based their high growth rates on consumption-related and property-related borrowing, at the same time following more expansionary fiscal policies, ended up borrowing heavily in order to finance their large current account deficits (Nelson et al., 2010; Ersoy, 2012; Lane, 2012).

In Table 6 we clearly see the very large external deficits the Southern European countries were running after 2003. Conversely, a core country like Germany ran up large external surpluses in its current account balance:

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<sup>21</sup> For a detailed approach on the performance of the current account in a country that experiences greater international financial and trade integration and the current account deficits in the EZ see Blanchard and Giavazzi (2002).

<sup>22</sup> In Ireland, Portugal, and Spain, foreign capital was mainly channeled to non-tradable sectors like housing, so once the Greek crisis started solvency fears and uncertainty about liquidity provisions by the ECB triggered a crisis of confidence and a sudden capital reversal in the Southern countries (Alessandrini et al., 2012; Merler and Pisani-Ferry, 2012).



**Table 6: Current account imbalances (% of GDP)**

	1993-1997	1998-2002	2003-2007	2008-2011
Greece	-2.0	-5.9	-9.1	-11.1
Ireland	3.4	-0.2	-2.6	-1.6
Italy	2.1	0.2	-1.8	-2.9
Portugal	-2.4	-9.0	-9.2	-10.5
Spain	-0.6	-3.1	-7.0	-5.8
France	1.1	2.0	-0.2	-1.9
Germany	-0.9	-0.3	5.1	5.7

Source: Lane, 2012

In their efforts to investigate the determinants of these current account imbalances by using a period-average model estimated on data for Organization for Economic Co-operation and Development (OECD) countries since the late 1960s, Barnes et al. (2010) find that the strength of housing investment appears to capture important effects over the last decade. They also find that the deficits observed in Spain, Greece and Portugal from 2005 until 2010 are not only larger and more sustained than those observed in recent decades<sup>23</sup> but also that these budget deficits, especially in the case of Greece and Portugal, contributed significantly to their weak external positions<sup>24</sup>. Portugal reached very poor growth rates while running high deficits, while Spain and Ireland experienced high growth and large deficits but only on the back of property and construction booms that proved unsustainable.

This strong housing investment, linked to unsustainable property booms, was strongly related to the large current account deficits of Ireland and Spain. These unsustainable booms and the consequent deficits were financed by Germany and the Netherlands<sup>25</sup>.

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<sup>23</sup> From 2002 to 2007, these countries ran large current account deficits by historical norms for industrial economies, each averaging over 7% of GDP. By contrast, current account surpluses in Germany and the Netherlands averaging over 5% of GDP over the same period were also far above historical norms, while the aggregate EZ current account position was close to balance (Barnes et al. 2010).

<sup>24</sup> In their study on the fiscal policies in the euro area during the crisis, Rother and Valenta (2010) find that persisting large fiscal imbalances not only hinder the efficiency of the fiscal policy action in the case of an emergency, but they may also fuel the accumulation of other macroeconomic imbalances at a national level, thus increasing the vulnerability of a country to negative shocks.

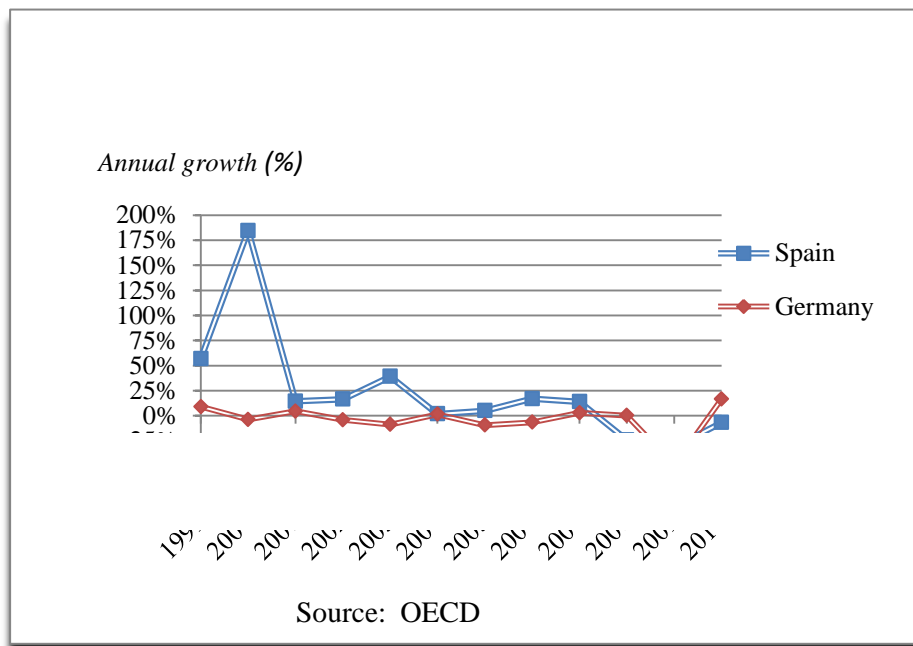
<sup>25</sup> Reviewing earlier studies, Barnes et al. (2010) present eleven potential determinants emerging from underlying theories and which are related to current account balance in the medium and long term. These are: demographic variables, faster GDP growth, lower levels of GDP per capita, the initial net foreign asset position, higher world oil prices, higher long term real interest rates, the increase in

The role of demographic factors is also of importance according to their analysis. Germany's demographic position would have justified the establishment of substantial surplus since it favours current saving among the population, while a country such as Ireland, the population of which is relatively young, would have been expected to run a deficit since current consumption relative to income increases.

Likewise, the demographic developments in Spain, such as tremendous amounts of immigration and the big population boom during the pre-crisis period caused the main external demand shocks and had a decisive effect on the creation of the real estate bubble, since the extra residents needed shelter. (Asprachs-Bracons and Rabanal, 2010; Neal and Garcia-Iglesias, in Press).

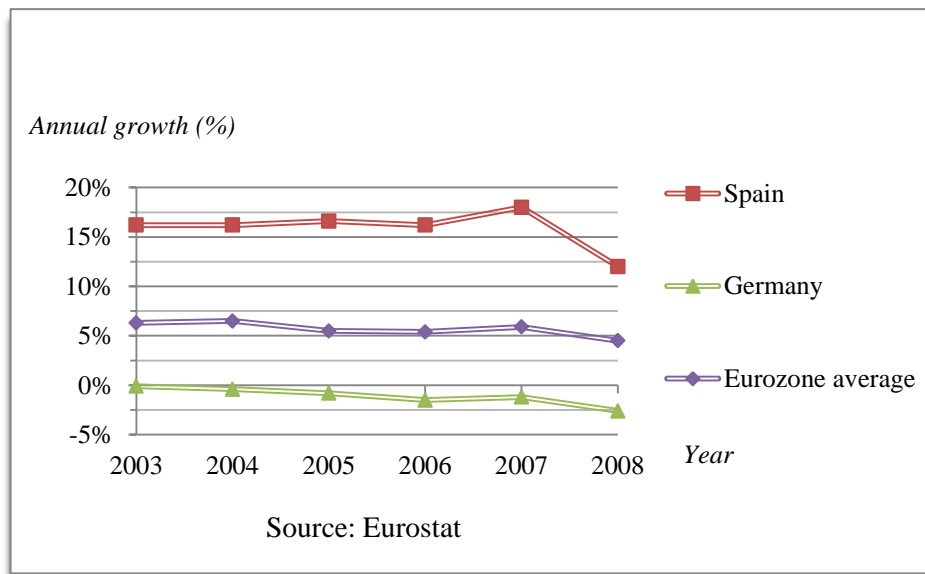
Chart 5 and 6 show very emphatically the high annual growth of immigration and the population growth over the last decade in Spain, contrasting with the counterpart figures for Germany and the EZ:

**Chart 5: Annual immigration growth (%) 1999-2010 in Spain and Germany**



general government balance, structural rigidities, trade openness, institutional quality and measures of financial deepening.

**Chart 6: Annual population growth (%) 2003-2008 in Spain, Germany and Eurozone (average)**



Many academicians put the blame on the South of the euro area because of the policy failures in the fiscal sector and the labour market and see the debt crisis in the EZ as the result of fiscal fragility in the peripheral European countries. This fiscal irresponsibility predominated in those countries together with a failure in the implementation of supply-side policies in the labour markets and the market of services regarding their liberalization. As a result of the differences in labour productivity growth between North and South and loss of competitiveness, the North benefited from low Unit Labour Cost (ULC) growth and real exchange rate depreciation relative to the South. This trend was reflected by capital outflows from the North – especially from German banks – to the South. These flows were used to finance domestic consumption and a boom in the residential sector rather than productive investments, spreading the seeds of the sovereign debt crisis (Alessandrini et al., 2012; Darvas, 2012; Schmid, 2012; Yang and Lei, 2012;). The lack of competitiveness and the current account imbalances to which it led are the main factors that generated the debt crisis according to Collignon (2012), an inconsistency which require painful macroeconomic adjustment.

The absence of a proper mechanism to foster structural adjustment within the euro from the formation of the EZ on and the subsequent failures of governments in the

implementation of policies for the same target are regarded as key factors which allowed the birth of macroeconomic and external imbalances and let them grow to unsustainable levels. The main aspects of that kind of adjustment mechanism are the macroeconomic aspect, referring to regulations and policies that affect the business climate, flexibility of markets, banking activities, innovation and the educational system of the country, and the macroeconomic aspect, the primary reflection of which lies in the aggregated productivity changes, price and wage competitiveness and external balances.

Some countries, such as Germany, demonstrated a remarkable ability to adjust within the euro area and they managed to turn their current account deficit into a sizeable surplus by improving their competitiveness<sup>26</sup> considerably from the mid-1990's until the onset of the crisis. But some others, such as Greece, Portugal, Italy and Spain, failed sensationally in the adjustment process, being unable to boost their competitiveness. All southern European countries are severely lagging behind on almost all criteria concerning structural reform, labour market efficiency, infrastructure and innovation (Allard and Everaert, 2010; Darvas et al., 2011; Darvas, 2012).

One could say that northern European countries were able to gain beneficial trade and competitive advantages as a result of having a single currency. Germany in particular was the country that was able to capture a larger portion of the European market because countries could no longer use their currency devaluations to compete with German exports. At the same time, smaller EU countries took on more debt in the course of time to finance purchases of more German exports. As a result, Germany was able to sustain massive trade surpluses while other economically weaker countries, such as Italy, ran enormous trade deficits.

In terms of competition, Germany has also been able to sustain significantly lower labour costs relative to southern European countries like Italy, Spain and France. In doing so, Germany put these other large exporting economies at a competitive disadvantage; a disadvantage that could only be remedied by a significant rise in German wages or an equally significant cut in the wages by these other countries. (Belke and Gros, 2007).

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<sup>26</sup> German ULCs increased by only 0.4% in the annual average of 1999-2004, with a substantial drop by 0.7% in 2004. This is how Germany improved its external competitiveness and raised economic growth in recent years (Belke and Gros, 2007).

Wage flexibility is a critical matter in the EMU and wage increases should follow a differentiated and rate of change, in order to avoid asymmetric disturbances. A rise in a nominal wage should reflect the differences in the productivity growth among the different economies. Equal nominal rate of growth in wages leads to a loss of competitiveness for countries with a low increase in labour productivity. Unfortunately, southern European countries increased wages much more than the rise in labour productivity justified as a result of trade union pressures, leading to fiscal irresponsibility, while Germany experienced a higher rise in labour productivity, but increased the respective wages much less (De Grauwe, 2006; Bennet et al., 2008; Carballo-Cruz, 2011; Featherstone, 2011; Bofinger, 2012; Gibson et al., 2012; Baer et al., in Press).

During all these years before the eruption of the crisis Greece, Ireland, Portugal, and Spain experienced rising prices and ULCs relative to Germany and other “Northern” EZ countries, something that resulted in a Real Effective Exchange Rate (REER)<sup>27</sup> appreciation for the relatively poorer countries of the union, which went hand in hand with the appearance of crowding-out effects in manufacturing and export activities. An appreciation of the real exchange rate is associated with a loss of international competitiveness<sup>28</sup>, leading to lower real output, higher unemployment, and higher external public indebtedness and interest payments (Becker, 2009; Chen et al., 2012; Ramirez and Menhem, 2012).

In their study on the role of real exchange rates in current account determination in the EMU, Arghyrou and Chortareas (2008) find that the relationship between real exchange rates and the current account is substantial in size and subject to non-linear effects. So, they find two groups of countries<sup>29</sup> systematically improving/deteriorating

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<sup>27</sup> The definition of REER by the World Bank: *Real effective exchange rate is the nominal effective exchange rate (a measure of the value of a currency against a weighted average of several foreign currencies) divided by a price deflator or index of costs*” (<http://data.worldbank.org/indicator/PX.REX.REER>). The Nominal Effective Exchange Rate (NEER) “tracks changes in the value of a given country’s currency relative to the currencies of its principal trading partners. It is calculated as a weighted average of the bilateral exchange rates with those currencies” ([http://ec.europa.eu/economy\\_finance/db\\_indicators/competitiveness/index\\_en.htm](http://ec.europa.eu/economy_finance/db_indicators/competitiveness/index_en.htm))

<sup>28</sup> Becker (2009) stresses that developments in a country’s external competitiveness “can be summarized in one single number: the real effective (i.e. trade-weighted) exchange rate”.

<sup>29</sup> Greece, Portugal, Spain and Ireland form the first group of countries; from the other side we have Austria, Belgium, Finland, the Netherlands and most notably Germany. In a more recent research, Arghyrou and Kontonikas (2012) find that, between January 2001 and February 2010, the real effective exchange rate appreciated by 22%, 18%, 15% and 10% in Ireland, Greece, Spain and Portugal, respectively. Belke and Gros (2007) find that Italy’s REER (based on relative export prices) rose by 15.6% between 1999 and 2004, compared to a 1.7% increase in Germany and a 1.3% drop in France.

their current account balances during the post-EMU era, the REER of which experiences correspondingly persistent depreciation/appreciation. To sum up, the southern European countries can be seen as the emerging/poor economies (and the northern ones as the developed/rich) in the Balassa-Samuelson theory<sup>30</sup> which followed exactly the path of the Balassa-Samuelson effect<sup>31</sup>. The prices of tradable goods in those countries increased and led to wage increases in both tradable and non-tradable sectors. A REER appreciation took place because of inflationary influence which eventually resulted in competitiveness deterioration. (De Grauwe, 2006). All these countries needed high productivity growth and low labour costs to compensate for this loss in international competitiveness, something that never happened.

In the following table we can see the evolution of the government gross debt as a percentage of the GDP in the euro area. During 2007-2011, as the rescue plans for the failing banks came into action and the recessional dynamics predominated in the affected economies, the debt-to-GDP ratio reached extreme highs:

**Table 7: Government gross debt-to-GDP in the euro area (%)**

Country	Debt-to-GDP			Change (%)	
	1997	2007	2011	1999-2007	2007-2011
Austria	67	61	72	-7	12
Belgium	114	84	95	-30	10
Finland	46	35	50	-11	15
France	59	64	87	5	23
Germany	61	65	83	4	18
Greece	103	105	166	3	60
Ireland	48	25	109	-23	84
Italy	114	104	121	-10	17
Netherlands	61	45	66	-16	20
Portugal	50	68	106	19	38
Spain	62	36	67	-26	31

Source: Alessandrini et al., 2012

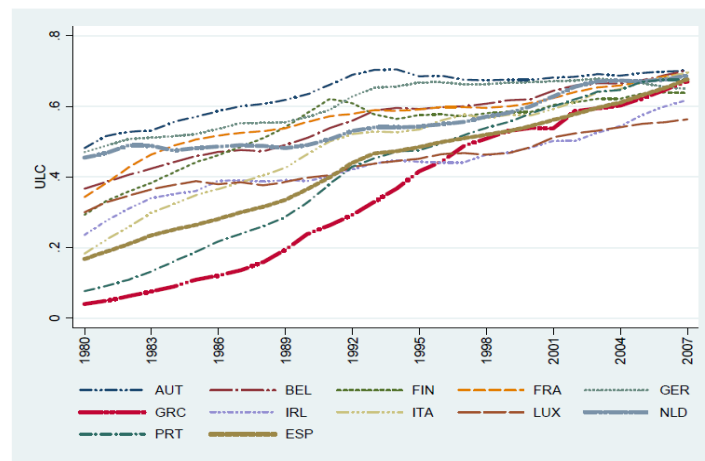
Garcia Pascual and Ghezzi (2011) estimate an increase of 20% and 40% for the Greek REER based on prices and ULCs respectively since 2001.

<sup>30</sup>See Balassa (1964), Samuelson (1964).

<sup>31</sup> Balassa-Samuelson effect maintains that price level is higher in high-income countries because they are relatively more productive in the traded goods sector than in non-tradables. The transmission mechanism is the following: Consider a permanent rise in tradables sector productivity. Since tradable prices are tied down by international prices, productivity increase results in increased wages. Thus, the non-tradables sector would be forced to raise its wages and thus will increase domestic price level leading to real exchange rate appreciation (De Grauwe, 2012).

The following chart clearly shows the rise of the ULCs in the problematic countries over the course of time:

**Chart 7: Unit Labour Costs in the euro area**



Source: Felipe and Kumar, 2011

#### **1.4. Market imperfections, credit rating agencies (CRAs) and the subprime crisis**

A very critical point in the chronicle of the debt crisis in Europe was the eruption of the subprime crisis in the U.S., the starting point of which signalled an era of strong turbulence in the world money and capital markets that has lasted until now and transferred itself across the Atlantic in the form of a contamination effect, causing tremors to European banks leading finally to rescue plans and sovereign debt deterioration.

The crisis made clear the failure of the markets' risk assessment mechanisms, as the risk pricing methods proved to be adequate resulting in the formation of an illusionary reality, in which complicated financial instruments<sup>32</sup> were regarded as absolute safe and risk-free investment tools that ensured a high rate of returns in exchange for minimal investment risk-carrying (Allen and Carletti, 2010).

Also directly related is the fact that during the previous decades the banking industry had experienced a long period of progressive and intense deregulation of the banking systems in the US and in Europe, starting in the 1980s, which allowed commercial

<sup>32</sup> Some of them are: Collateralized Debt Obligations (CDOs), Asset-Backed Securities (ABSs), Mortgage-Backed Securities (MBSs), Collateralized Loan Obligations (CLOs), Collateralized Bond Obligations (CBOs), Collateralized Synthetic Obligations (CSOs) etc.

banks to take on all the activities investment banks had been taking (the development of new and risky assets like derivatives and complex structured credit products) and led to a significant transformation of the banks' business model; financial innovation contributed to the developing of the "Originate-to-Distribute" (OTD) model<sup>33</sup> allowing banks to abandon the "Originate-and-Hold" (OAH) model.

Deregulation also helped banks to distribute - through securitization and high leverage - the new products to a large number of investors worldwide through financial markets, distributing at the same time their balance-sheet risk<sup>34</sup>. Hence, banks became more and more dependent on perceptions of financial markets as a significant ratio of their liquidity provision came from the intermediation of the aforementioned instruments. However, systemic risk was also increased to high levels at the same time, due to the interconnection of the banking industry around the globe, the universal banking system and the magnification of several banks' balance-sheets<sup>35</sup> (Alexakis, 2011; Gambacorta and Marquez-Ibanez, 2011; De Grauwe, 2013).

As the bubble in the real estate sector in the US eventually burst and prices began to fall, the price of a large number of structured ABSs almost vanished in a very short time period. As a result, many banks had to write off huge losses in their balance sheets, since their exposure to those securities was huge. Unfortunately, the high exposure of major European banks to losses in the US market in the ABSs as well as the dependence of these banks on US money markets as a source of dollar finance, resulted in the appearance of asymmetric effects across the EZ. The exogenous financial shock in the US mortgage market begun to pave the way for the future sovereign debt crisis.

As cross-border financial flows dried up in late 2008, with investors repatriating funds to home markets and reassessing their international exposure levels and reducing their risk appetite, Ireland's banking system, which was highly dependent on international

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<sup>33</sup> Gambacorta and Marquez-Ibanez (2011) define the OTD business model as "*an intermediation approach in which banks originate, repackage and then sell their loans (or other assets such bonds or credit risk exposures)*".

<sup>34</sup> Greenspan (2010) characteristically write of "*risky financial intermediation*" and of "*inappropriately low financial intermediary capital*" (that is, excessive leverage). The weak regulatory structures, and the high leverage in the banking sector Allen and Carletti (2010) name also as exacerbated the effects of the crisis.

<sup>35</sup> The so-called "too-big-to-fail-banks", the size of which are so large, that makes their collapse prohibitive for the authorities, since their failure would trigger a chain reaction of new failures due to the interconnectedness with other banks and therefore would pose a huge risk for the whole financial system. Governments are left therefore with no other alternative than to support them financially thus increasing their debt burdens.



short-term funding, was forced to ask for an extensive two-year liability guarantee for its banks (McGuire and von Peter 2009; Acharya and Schnabl 2010; Shin 2012; Lane, 2012).

The banking system exposure on “toxic” securities synchronized perfectly with the development of bubble economies in several EZ member economies. As mentioned before, deregulation, securitization and high leverage worked together in the banking sector and allowed the overexposure of banks to too many property-backed loans, something that magnified their losses after the decline in construction, the abandoned projects and the falling property prices that followed (Lane, 2012; Priewe, 2012).

De Grauwe (2010d) speaks of “*the destabilizing role of financial markets*” as “*periods of euphoria alternate with periods of depression amplifying movements in asset prices that are unrelated to underlying fundamentals*”. A special mention is made of the role of the CRAs in amplifying the destabilizing movements in the financial markets and the dispersion of the crisis. CRAs bear some responsibility for the financial crisis that started in 2007 and remains ongoing. This is acknowledged by policymakers, market participants, and by the agencies themselves, as Utzig (2010) mentions. He also finds flaws in their rating methods, loose corporate governance and less degree of regulation<sup>36</sup>.

Greenspan (2010) argue that the analysts working in three major CRAs displayed low level of skilfulness in anticipating the onset of the crisis and that their risk management models failed completely leading to credit risk misjudgements, while De Grauwe (2009), Pisani-Ferry (2011) and Bofinger (2012) accuse them directly of systematically failing to see crisis coming and after the crisis erupts overreacting, thereby intensifying it.

They also put a certain degree of blame on them for the significant increase in government bond rates in southern European countries, because the series of downgrades they went forward with acted as a sort of self-fulfilling prophecy which led to a clearance sale in the bond market. In their econometric exercise, Gärtner et al. (2011) conclude that rating downgrades triggered processes of self-fulfilling prophecies that may have driven even relatively healthy countries towards default.

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<sup>36</sup> Similarly, Hunt (2009) distinguishes the limited competition, the lack of transparency, the rating-dependent regulation and the conflict of interest as the chief “problems” of the CRAs’ institutional operational framework.

In a very enlightening paper, White (2010) takes a very critical stance towards the true value CRAs might bring to the financial markets by examining whether the three major CRAs in reality deliver valuable information material about default probabilities in the financial markets<sup>37</sup>. He also blames the financial regulatory structure that brought CRAs to the centre of the US bond markets because by doing so it guaranteed that when these rating agencies made mistakes, those mistakes would have serious consequences for the financial sector<sup>38</sup>.

Tichy (2011) maintains the opinion that the lack-of-transparency criticism towards the CRAs is absolutely justified, since they reveal neither the standards on which their ratings are based nor the methods applied. He also presents a series of forecasting errors to which the CRAs are exposed, such as pro-cyclicality, turning-point mistakes, underestimation of changes and incapacity to deal with surprises (shocks).

In his effort to identify the fundamental causes behind the euro crisis, Bofinger (2012) categorically gives partial responsibility to market failure. He sees e.g. the deep crisis through which the Irish and Portuguese economy have been going as a result of a rampant credit expansion during which no national or European supervisory authority warned of potential risks. He also states that the self-regulation of the financial system proved a chimera.

### **1.5. The imperfect design of the EMU and the currency union's degree of optimality**

Although the increase of sovereign debt to unsustainable levels for many euro area member states was mainly due to governmental failure in economic policy as well as the underperformance of an insufficient institutional supervision of the financial sector, much of the present chaos could have been avoided or even never have occurred if the design of the EZ hadn't had so many failures and its institutions hadn't been so cumbersome in respect of effective governance and policy coordination. The

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<sup>37</sup> A turning point according to the writer is the change in the CRAs' business model in the early 1970s; the "investor pays" model was converted to the "issuer pays". According to this, the bond issuer is the one who pays the rating firm to rate the bond. Needless to say, the CRAs in that case had good reasons to satisfy their customers with a good rating, otherwise they might have found another firm. What comes in the surface from this business model is a major conflict-of-interest issue.

<sup>38</sup> The three major CRAs come under the writer's fire are Standard and Poor's (S&P), Moody's and Fitch. He raises accusations against them, that during the rating process of the "toxic" securities which brought down the US mortgage market they were operating in a situation where they had essentially no prior experience, and that they gave the answers that issuers wanted to hear because they were under considerable financial pressure

seeds of today's crisis pre-existed to a certain degree from the very first moment that the EZ came into existence.

The existence of one currency and at the same time the absence of a central supervisory fiscal authority, responsible for all member states' fiscal policy, meant that national fiscal authorities could not choose and implement fiscal policies which would have been optimal for their countries, adjusting thus to macroeconomic imbalances, should they have occurred. Instead, many countries followed a path of unsustainable fiscal policy that led to a serious deterioration of the sovereign debt quality. The lack of a single planner deciding upon both monetary and fiscal policy posed a serious free-riding problem; each fiscal authority felt tempted to try to improve the situation for its country by expanding government deficits (Uhlig, 2002; Wyplosz, 2006; De Grauwe, 2010c).

The SGP<sup>39</sup>, one of the pillars of EMU and a safeguard mechanism which was supposed to remove the temptation for each country to seek an improvement in their situation at the expense of all other members in the EMU and thus bridle the widely divergent trends in the public finances of the EU countries, lost its credibility after the first two violators<sup>40</sup> were not penalized by the Economic and Financial Affairs Council (ECOFIN). Its spirit of discipline, which aspired to ensure sound budgetary balances and low public debts, was damaged and with it its preventive power. The fact that no automatic rules were applicable in case of an SGP violation meant that countries always had the chance to get away with it somehow (Uhlig, 2002; Buti et al., 2003; Tanzi, 2004).

Although it was the necessary fiscal framework providing long term sustainability of national fiscal policies, since it was unwise to leave the process of fiscal convergence to the discretion of the individual countries' policymakers, it was built on a weak institutional foundation; spending and taxation were still very much the responsibility of national governments and parliaments left countries free to have any level of public spending or taxation they desired. Thus, they could continue pursuing their own social policies (Wyplosz, 2006; De Grauwe, 2010c).

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<sup>39</sup> The SGP has been an object of criticism since the very beginning of its existence. In his paper on the political economy of monetary union in Europe, De Grauwe (1993) claims that most of the convergence criteria of the Maastricht Treaty serve no economic purpose since they cannot easily be grounded on economic analysis. What is more, some economists are for its strengthening (e.g. Uhlig, 2002), while some others are in favour of more flexibility (e.g. De Grauwe, 2013).

<sup>40</sup> Germany and France violated the SGP in 2003, but no penalties were imposed for these two countries (Tanzi, 2004; van Treeck, 2011).

The SGP is too constraining to allow adequate policy and budgetary flexibility. This lack of flexibility hindered fiscal authorities in their response to certain shocks when necessary<sup>41</sup>. The procyclical character of the SGP allows for an easy restoration of public finances during boom phases but it puts harsh pressure on countries during recessions, making it insufficient to cope with large scale recessions and adverse shocks and limiting its effect on growth and employment (Coricelli and Ercolani, 2002; Bishop, 2003; Buti et al., 2003; Hule and Sutter, 2003).

Correspondingly, the SGP focuses almost exclusively on short term objectives for the budget deficit and disregards structural reforms. It treats equally countries with different medium and long-term prospects and different debt levels and may prevent countries from implementing policies – such as pension reforms which improve sustainability over the medium and long term at the price of a short term worsening of deficit (Beetsma, 2001; Buti et al., 2003; Heipertz and Verdun, 2004).

One question that still remains unanswered is whether or not the EZ forms an OCA. Long before the monetary union, as the EMU is still in the form of the Community of Twelve, De Grauwe (1993) believes that the Community is not an OCA, since some countries are unable to avoid large and costly adjustment problems when hit by asymmetric economic shocks, in his opinion<sup>42</sup>, thus making the economic costs of monetary union greater than the benefits for a significant number of countries.

Six years later, as EU has expanded to 15 current and 5 prospective members, Karras (1996) also explores the same question. The results of his research imply that a common European currency (despite its political attractiveness and potential credibility gains) will have very few stabilization benefits, because country-specific shocks<sup>43</sup> in Europe (and the EU) are both large and asymmetric; instead, it may actually have adverse effects on output variability. Both of them argue that the concept of creation of the euro was primarily a political vision and not a project whose success was based on sufficient economic evidence<sup>44</sup>.

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<sup>41</sup> Higher budgetary flexibility is required to respond to country-specific shocks in absence of national monetary independence (Buti et al., 2003).

<sup>42</sup> However, the finds that by that time there had been a subset of EC countries that forms an OCA, namely Germany, the Benelux and possibly France.

<sup>43</sup> Shocks that are associated with a single economy (domestic fiscal disturbances, for example), in contradiction to common shocks that affect all the economies in a similar way (oil shocks, for example).

<sup>44</sup> Many economists today believe the same, e.g. Wihlborg et al. (2010).

Most economists agree that EMU is only partially an OCA, since it doesn't satisfy all the criteria the related theory prescribes. According to Mundell's (1961) necessary prerequisite, EMU doesn't form an OCA because it is characterized by very limited labour mobility<sup>45</sup> (however it displays high mobility of capital). Nevertheless, it has a high degree of commercial openness and diversification of production<sup>46</sup> (Geza and Vasilescu, 2011). In his research on whether or not their entry into the currency union helped euro area member states to meet the OCA criteria better *ex post* than *ex ante*, according to the endogenous OCA analysis<sup>47</sup>, Willet (2010) finds that "*in future efforts at currency unification the focus should be placed on entry conditions more than on hopes of subsequent reforms after entry*".

However, there are additional constraints not allowing the EMU to march on the way of an OCA, which originate from its initial flawed design and its institutional imperfection. The absence of political and fiscal integration prevents a stable and coordinated application of economic growth policy, while the lack of an efficient and adequate mechanism of financial transfers<sup>48</sup> makes the EMU a weak player in dealing with asymmetric shocks and delays the process of convergence<sup>49</sup>. (Yüceol, 2006; Bofinger, 2012; Darvas, 2012; Krugman, 2012).

In all these years of EMU existence nobody predicted the existence of a crisis resolution mechanism for sovereigns. The result was that European leaders were unable to act fast and effectively and make decisions when needed. The EZ governments failed to cooperate and give a clear signal indicating their readiness to support the problematic countries, highlighting the weak governance of the EU's political economy and its thin democratic accountability. Their inadequate and belated responses exposed EU's executive and democratic deficits and its lost policy credibility (De Grauwe, 2010a; Gianviti et al., 2010; Darvas, 2012; Schwab, 2012).

The bond market participants therefore acted nervously during the crisis period and never convinced that EU politicians could work out an effective solution. Unfortunately, ECB could also offer no significant help, since its strict no-monetary

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<sup>45</sup> And thus a member state is exposed to worsening unemployment and recessionary effects if it experiences asymmetric shocks (Wyplosz, 2006; Krugman, 2012).

<sup>46</sup> McKinnon (1963) sets the degree of openness as a crucial criterion in forming the OCA, while the important contributor for Kenen (1969) for the OCA is product diversification.

<sup>47</sup> More on the endogeneity of the OCA criteria in Frankel and Rose (1998).

<sup>48</sup> Budgetary transfers are regarded one of the more appropriate adjustment mechanisms (De Grauwe, 2012).

<sup>49</sup> Yüceol (2006) even comes to the point of claiming that EMU has devastating implications if its participants are not sufficiently converged prior to its establishment.

financing allowed no space for a lender of last resort<sup>50</sup>. This one-sided engagement to price stability took place against financial stability. Neither was there a common banking supervisory institution or a Europe-wide backing of banks, since banking supervision remained a national case. This decentralized nature of banking supervision made contagion more likely and posed a possible cause of systemic risk (Uhlig, 2002; Gianviti et al., 2010; Darvas, 2012; De Grauwe, 2013).

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<sup>50</sup> The Central Bank as a lender of last resort and the government budget as an automatic shock absorber are seen as two major stabilizers that can act as shock absorbers in a crisis period (De Grauwe, 2013).

## **Chapter 2: Escalation of the debt crisis and policy measures against it**

### **2.1. The vicious circle between banks and sovereigns and the contagion effect**

While it may be argued that the debt crisis in the euro area officially began in early 2010, as sovereign spreads of debt-encumbered countries showed an alarming tendency to increase<sup>51</sup>, deteriorating public finances and rising government debt initially emerged as an aftermath of major rescue plans for failing banks and fiscal stimulus measures during the global financial crisis of 2008-09, which in turn were the financial contagion effects<sup>52</sup> of the subprime crisis in the USA (see Section 1.3 and Section 1.5).

Bengtsson (2013) writes of a “deep freeze” in the European money market and a “dried-up” interbank funding and wholesale funding market. There was a clear preference to turn to U.S. Treasury Bills, which were regarded both as highly liquid and absolutely safe securities, while securities of long maturities became perfectly illiquid. The deteriorating confidence among banks, and the risk aversion and mistrust among investors reigning in that period limited interbank lending to overnight only (Giannone et al., 2011; Bengtsson, 2013).

The poor liquidity problem for many European banks did not take long to lead to solvency problems for many of them, including several major banks<sup>53</sup>. The rescue of the Belgian-Dutch bank Fortis by the governments of Belgium, Luxembourg and the Netherlands on 27 September (the first systemic bank to be saved) was followed by that of Dexia, a Belgian-French bank, also of systemic size, for whose rescue three states - Belgium, France and Luxembourg - offered financial aid amounting to €6,4bn<sup>54</sup>.

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<sup>51</sup> Or even earlier, in early November of 2009, as the new Greek Prime Minister, George Papandreou announced that that Greece’s annual budget deficit would be 12.7% of GDP, twice as high as previously announced, an announcement that marked a series of repeated downgrades of the Greek sovereign debt quality (De Santis, 2012).

<sup>52</sup> For Constâncio (2012), contagion is “*one of the mechanisms by which financial instability becomes so widespread that a crisis reaches systemic dimensions*”. In another section of the same article he explains the criteria which must be satisfied in order to detect and characterize a contagion event.

<sup>53</sup> In September 2007, the Bank of England (BoE) granted over £15bn to keep Northern Rock alive after a bank run and additionally canalized £10bn to several banks in City of London, which were on a liquidity shortage (Varoufakis, 2011).

<sup>54</sup> The same bank needed a second rescue package in 2011 (Varoufakis, 2011).

On the same day, the Irish government had to guarantee all deposits and debts of six Irish banks and their subsidiaries located abroad (Pisani-Ferry and Sapir, 2010; Varoufakis, 2011; Whelan, 2011). A year later, the National Asset Management Agency<sup>55</sup> (NAMA) was established in order to acquire troubled property assets at a discount through government bond issuance<sup>56</sup> (Whelan, 2011). Not even German public finances managed to escape an extra charge, as Hypo Real Estate's rescue package demanded more than €50bn, of which the Bundesbank contribution was €20bn<sup>57</sup>

In brief, European financial institutions under pressure needed support measures in the form of capital injections, guarantees on bank liabilities, relief of impaired assets, and liquidity and bank funding support, the total economic impact of which amounted to almost 44% of GDP for the entire EU (Pisani-Ferry and Sapir, 2010).

The financial support to banks through public funds led to a deterioration of public finances in many countries. This in turn caused a negative quality reassessment of many countries' sovereign debt; failing banks and weak banking sectors therefore became burdens dragging sovereign debt to the bottom of its credit rating<sup>58</sup>.

However, at the same time the worsening of the macroeconomic outlook for many euro area countries meant higher borrowing costs (through higher sovereign spreads) for domestic banks, whose balance sheet was exposed to public bonds, and this in turn translated to lower investment and growth.

Eventually, lower growth prospects in combination with concerns about new public financial assistance to fragile banks maintained pressure over sovereign spreads; banks and sovereigns remained very closely connected and tensions from one sector were transferred very quickly to the other<sup>59</sup> (Afonso 2010; Schuknecht et al., 2010; Mody and Sandri, 2012).

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<sup>55</sup> See <http://www.nama.ie/>

<sup>56</sup> Anglo Irish Bank's recapitalization costs went up to almost €30bn pushing the Irish deficit for 2010 up to a record high of 32% of GDP (Whelan, 2011).

<sup>57</sup> See <http://www.bloomberg.com/apps/news?pid=newsarchive&sid=amxJTktF7JMs&refer=home>

<sup>58</sup> Sgherri and Zoli (2009) find evidence that it was since October 2008 that the international markets had started to worry about the potential implications of a fragile financial sector for a country's fiscal position had. From this time on it seems that most future market projections for many euro area country's debt dynamics allowed no space for optimism.

<sup>59</sup> In a very thorough examination of banking crises throughout world history, Reinhart and Rogoff (2009) underline the dramatic deterioration of public finances in countries whose banking sector experienced a severe crisis. They detect an average increase of 86% in government debt three years after the onset of the crisis. According to their data, the destructive fiscal impact due to lower government revenues and higher fiscal expenditure is far more damaging to the economy than the



The table below shows the rapid increase of the debt-to-GDP ratio growth rate and the debt-to-GDP levels for the period 2007-2009, as a result of the governmental financial support plans across the euro area in order to prevent banks from collapsing and to stimulate economic recovery from the banking crisis:

**Table 8: Debt-GDP ratio**

	growth rate in %		levels in %	
	2007-2008	2008-2009	2008	2009
Austria	5.33	10.30	62.64	69.10
Belgium	6.66	8.14	89.85	97.16
France	5.63	12.90	67.39	76.09
Germany	1.41	10.91	65.89	73.08
Greece	3.79	13.50	99.19	112.57
Ireland	75.36	49.33	44.08	65.83
Italy	2.16	8.31	105.77	114.56
Luxembourg	105.12	10.87	13.54	15.01
Netherlands	27.94	2.77	58.18	59.79
Portugal	4.24	16.70	66.32	77.39
Spain	9.81	36.67	39.70	54.25

Source: Candelon and Palm, 2010

The close interconnection between banks and sovereigns can be seen as a contagious chain reaction: Euro area countries such as Ireland, Italy, Portugal and Spain experienced contagion from Greece, the beginning of which was marked by the continual downgrades of Greek debt creditworthiness (Arezki et al., 2011; Arghyrou and Kontonikas, 2012; Haidar, 2012; Constâncio, 2012). What started as a mortgage crisis contagion worldwide and then continued as an interbank contagion across the EU, now moved on to a new level with the sovereigns (Gurdgiev, 2011; Haidar, 2012).

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bailout costs. They also find that a typical prelude before the introduction of a systemic banking crisis is a combination of large capital inflows, credit booms and large asset bubbles.

## 2.2. The action of the most important key players

Once government bonds risk premium and sovereign spreads started climbing over sustainable levels, it became obvious that many countries were no longer in a position to honour their debt obligations without external assistance, since liquidity provision through sovereign debt markets became a very expensive business; the bond yields required from international investors made external borrowing unaffordable. This sudden indirect blockade from the international bond markets left no other option than defaulting on their debt. Sovereign default also meant that the affected countries had to abandon the common currency and print their own money, in order to fight the credit crunch and again mobilize their economies, even in a rudimentary way; unless someone else provided liquidity. The general pattern was therefore the same everywhere: countries lost market confidence on their capacity to pay back their debt obligations, spreads reached scary heights and the debt crisis became a liquidity crisis; national governments simply failed to roll over their debts at viable interest rates. In this state of emergency, three key players came to the fore and took action in cooperation with each other and with the highly indebted countries: the ECB, the EU (through its executive body, the EC) and the IMF.

Before we examine the history of each separate country in the following subsections, we briefly outline the role of the three key players in the restoration of liquidity, which can be summarized as follows:

The ECB had already taken action in late 2008 by starting to lower interest rates. After an almost 8-year period of stable Main Refinancing Operations (MROs) at fixed rate 4.25%, within four years the ECB reduced it down to a record low of 0.75%<sup>60</sup> with the aim of facilitating low-cost borrowing and thus stimulating investment and growth<sup>61</sup>.

With the deposit facility bringing in nothing, since overnight deposits in ECB enjoy 0.00%<sup>62</sup>, not many reasons remain for banks not to lend money; a non-performing overnight deposit at ECB would be a choice only out of safety reasons. Also in 2008, the ECB decided to extend the duration of its Long Term Refinancing Operations (LTROs) to 6 months, then to 12 months in June 2009 and even to 36 months in

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<sup>60</sup> From the 15<sup>th</sup> October 2008 to 11 July 2012 the fixed rate for the MROs experienced a twelfold downward adjustment.

<sup>61</sup> See <http://www.ecb.int/press/pressconf/2012/html/is120705.en.html> and <http://en.mercopress.com/2012/07/05/ecb-lowers-interest-to-record-low-0.75-pushes-banks-to-lend-by-cutting-overnight-rate-to-zero>

<sup>62</sup> Since 11 July 2012.

December 2011, targeting improvement of liquidity through the banking sector<sup>63</sup> (Giannone et al., 2011).

In May 2010, the ECB inaugurated its intervention in the open government bond market with its Securities Markets Programme (SMP), through which it bought public bonds whenever their yields rallied, so that it could take some pressure off and bring borrowing rates down<sup>64</sup>.

On 6<sup>th</sup> September 2012, the ECB announced a new outright transactions policy in secondary sovereign bond markets, known as Outright Monetary Transactions (OMTs). On condition that a euro area country participates in a European Financial Stability Facility/European Stability Mechanism (EFSF/ESM) macroeconomic adjustment programme or a precautionary programme (Enhanced Conditions Credit Line-ECCL), the ECB would buy public bonds without limit concerning bonds with a maturity of one to three years<sup>65</sup>.

Apart from the foregoing, the ECB has also taken some other non-standard monetary measures in order to increase liquidity in the banking sector and remove tensions from the sovereign bond market, such as: more assets were accepted by the ECB as collateral for liquidity provision, even if their creditworthiness was seriously downgraded<sup>66</sup>, the revival of the U.S. dollar/euro swaps servicing the provision in U.S. dollars, and the purchase of euro denominated covered bonds in the covered bond market<sup>67</sup> (Giannone et al., 2011).

Finally, the ECB is a member of a tripartite group, the so-called “Troika”, along with the EU and the IMF, which evaluates and monitors the current debt crisis in the EU, approves loans to the affected countries and proposes policy measures, the implementation of which are conditions for the approved loans<sup>68</sup>.

For its part, the EU decided on the creation of a temporary rescue mechanism on 9 May 2010, the EFSF, which can financially assist troubled euro area countries by providing loans (see above), by covering the costs of bank recapitalization or even by

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<sup>63</sup> See also <http://www.ecb.int/press/pr/date/2008/html/pr080328.en.html>  
[http://www.ecb.int/press/pr/date/2009/html/pr090507\\_2.en.html](http://www.ecb.int/press/pr/date/2009/html/pr090507_2.en.html), also  
[http://www.ecb.europa.eu/press/pr/date/2011/html/pr111208\\_1.en.html](http://www.ecb.europa.eu/press/pr/date/2011/html/pr111208_1.en.html).

<sup>64</sup> See <http://www.ecb.int/press/pr/date/2010/html/pr100510.en.html>

<sup>65</sup> See [http://www.ecb.int/press/pr/date/2012/html/pr120906\\_1.en.html](http://www.ecb.int/press/pr/date/2012/html/pr120906_1.en.html)

<sup>66</sup> Even down to “junk” status, like the Greek bonds.

<sup>67</sup> See also [http://www.ecb.int/press/pr/date/2010/html/pr100510\\_1.en.html](http://www.ecb.int/press/pr/date/2010/html/pr100510_1.en.html)

<sup>68</sup> See <http://www.bbc.co.uk/news/business-15149626> and  
<http://www.forexnews.com/blog/questions/who-is-the-troika/>. For the IMF’s loan conditions see  
<http://www.imf.org/external/np/exr/facts/conditio.htm>

purchasing public bonds in the primary and/or secondary bond market. The funds needed for its operations are acquired through bond issuance or through issuance of other debt instruments. Backing for the bond issuance is offered by EFSF's shareholders, i.e. the 27 EU member states, each of them contributing with guarantees according to their percentage participation in the ECB's paid-up share capital. EFSS can borrow up to €440bn and work together with the IMF, which can offer up to €250bn<sup>69</sup>.

Six months later, the European Financial Stabilization Mechanism (EFSM) was launched (also from the 27 euro area member states), an additional funding mechanism for euro area member states in financial difficulties. EFSM can raise funds in capital markets using the EU budget as a guarantee, up to €60bn<sup>70</sup>. Both EFSF and EFSM were replaced by the ESM which became effective on 8 October 2012. ESM is the primary and permanent crisis resolution mechanism, which provides financial support to euro area countries. It operates exactly like EFSF and has a lending capacity of €500bn originating from a total subscribed capital of €700 billion<sup>71</sup> provided by euro area member states.

Apart from the aforementioned financial security mechanisms, the EU has also decided on new measures on fiscal and macroeconomic governance and surveillance, designed to strengthen fiscal and macroeconomic stability and support competitiveness in the euro area<sup>72</sup>.

On 13 December 2011, the "Six-Pack" entered into force, a pack of five regulations and one directive, approved by all 27 EU member states and the European Parliament in October 2010. The "Six-Pack" makes the SGP stronger by reinforcing both its preventive and corrective arm and addresses the fight against excessive deficits<sup>73</sup>.

The "Euro Plus Pact", which was signed by 23 EU member countries on 2 March 2011, a plan which takes the form of voluntary commitments to specific political actions in favour of the fostering of employment and competitiveness, improvement

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<sup>69</sup> See <http://www.efsf.europa.eu/about/index.htm> and [http://ec.europa.eu/economy\\_finance/european\\_stabilisation\\_actions/efsf/index\\_en.htm](http://ec.europa.eu/economy_finance/european_stabilisation_actions/efsf/index_en.htm)

<sup>70</sup> See [http://ec.europa.eu/economy\\_finance/eu\\_borrower/efsm/index\\_en.htm](http://ec.europa.eu/economy_finance/eu_borrower/efsm/index_en.htm)

<sup>71</sup> See <http://www.esm.europa.eu/> and [http://ec.europa.eu/economy\\_finance/european\\_stabilisation\\_actions/esm/index\\_en.htm](http://ec.europa.eu/economy_finance/european_stabilisation_actions/esm/index_en.htm)

<sup>72</sup> See [http://ec.europa.eu/economy\\_finance/economic\\_governance/](http://ec.europa.eu/economy_finance/economic_governance/), [http://ec.europa.eu/economy\\_finance/articles/governance/2012-03-14\\_six\\_pack\\_en.htm](http://ec.europa.eu/economy_finance/articles/governance/2012-03-14_six_pack_en.htm) and [http://europa.eu/rapid/press-release\\_MEMO-13-318\\_en.htm](http://europa.eu/rapid/press-release_MEMO-13-318_en.htm)

<sup>73</sup> See [http://europa.eu/rapid/press-release\\_MEMO-11-898\\_en.htm](http://europa.eu/rapid/press-release_MEMO-11-898_en.htm) and [http://ec.europa.eu/economy\\_finance/articles/governance/2012-03-14\\_six\\_pack\\_en.htm](http://ec.europa.eu/economy_finance/articles/governance/2012-03-14_six_pack_en.htm).

of the sustainability of public finances, financial stability reinforcement and tax policy coordination<sup>74</sup>.

Finally, the Treaty on Stability, Coordination and Governance (TSCG) in the Economic and Monetary Union, signed by 25 countries in March 2012, which came into force on 1 January 2013, constitutes an intergovernmental agreement (but not an EU law) and prescribes (among other rules) balance budgets, debt brakes and automatic correction mechanisms, in the case where the debt-GDP ratio exceeds 60% and is not reduced at 5% per year through the debt brake rules. The balance budget and debt brake rule, as well as the automatic correction mechanisms have already become national law in each country that signed the TSCG<sup>75</sup>.

The IMF is the third partner of the “Troika” which is involved in the rescue packages in the euro area<sup>76</sup> (as well as in other Balkan countries and former Soviet republics). The global financial crisis and the debt crisis in Europe gave the IMF a revitalizing boost, as a long period of stability had accounted for a rapid fall in its lending. The loss of its importance was reflected by a severely limited portfolio of outstanding loans by early 2008 and by its limited financial role to a few low income countries.

The IMF currently participates in the financial assistance granted to Greece, Ireland and Portugal by contributing one third of the funding and monitors European financial assistance for Spain’s bank recapitalization program under technical assistance. Its economists have worked out structural adjustment programmes, jointly with EU and ECB economic experts, which are currently implemented to the funded euro area states and periodically evaluate the adjustment process by issuing interim reports. IMF also provides policy advice and consultation services, and makes proposals on measures to fight the sovereign debt crisis.

It also assesses the stability of the financial sector in the euro area through assessment programmes and provides technical expertise in a number of areas in various ways with the aim of helping countries to improve the capacity of their institutions and the

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<sup>74</sup> See [http://ec.europa.eu/europe2020/pdf/euro\\_plus\\_pact\\_background\\_december\\_2011\\_en.pdf](http://ec.europa.eu/europe2020/pdf/euro_plus_pact_background_december_2011_en.pdf) and [http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ec/120296.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/120296.pdf)

<sup>75</sup> See [http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ecofin/134543.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/134543.pdf) and [http://www.eurozone.europa.eu/media/304649/st00tscg26\\_en12.pdf](http://www.eurozone.europa.eu/media/304649/st00tscg26_en12.pdf)

<sup>76</sup> For the IMF’s engagement in Europe in terms of financial and technical assistance and policy advice see <http://www.imf.org/external/np/exr/facts/pdf/europe.pdf> and Seitz and Jost (2012).

effectiveness of their policymaking<sup>77</sup> (Bird and Rowlands, 2009; Presbitero and Zazzaro, 2012; Seitz and Jost, 2012).

### **2.3. The case of Greece**

As already mentioned (see Section 1.4.), Greece was a typical living-beyond-its-means case<sup>78</sup>. Its GDP consumption-driven growth during all those years was massively financed by excessive public deficits, leading to a huge public debt-GDP ratio. The longstanding low competitiveness and productivity of the Greek labour market and the long-term trade and investment imbalances grew along with a frivolous maladministration of public finances characterized by too much public expenditure. The great weaknesses of the public tax collection mechanisms were responsible for reduced tax revenues, and the high quotas of tax evasion only intensified the problem.

Politicians did little to modernize the labour market and failed to set up structural adjustment strategies. The labour unions maintained a powerful presence and the Greek governments were forced to give in to their demands for wage increases. In addition, many leading unionists (who, incidentally, launched a political career in the course of time) also played an important role in the non-opening of the closed-shop profession in Greece. What is more, the whole system was susceptible to corruption and clientelistic practices, which went hand in hand with nepotism on the political scene (Katsimi and Moutos, 2010; Nelson et al., 2010; Featherstone, 2011; Sauernheimer, 2011; Ardagna and Caselli, 2012; Gibson et al., 2012).

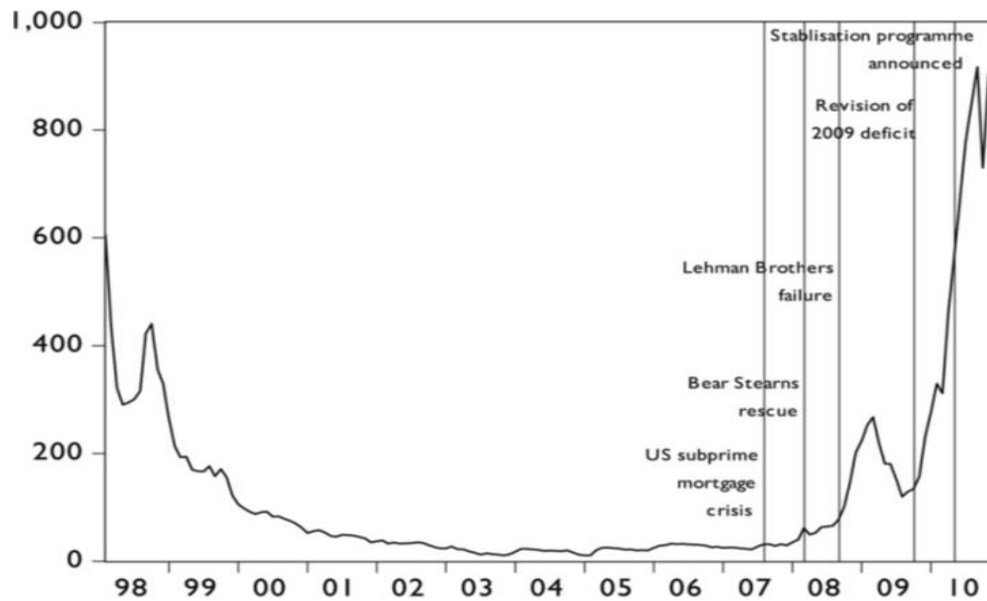
It is therefore hardly surprising that Greece was the first country to be shut out of the bond market, since its macroeconomic outlook was disappointing. The markets did not really believe that the country could remain solvent in the long run and once Greek spreads began to deviate from those in the rest of the euro area they never fell again, as Chart 8 on the next page clearly shows:

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<sup>77</sup> See also <http://www.economist.com/node/21564254> and <http://www.imf.org/external/np/exr/facts/pdf/glance.pdf>

<sup>78</sup> The Greek banking sector was relatively immune to the toxic assets and no real estate bubble resulted (Armingeon and Baccaro, 2012b).

**Chart 8: Greek spreads: yields on Greek over German 10-year benchmark bonds (basis points)**



Source: Gibson et al., 2012

Greece faced serious borrowing problems when the CRAs questioned the country's creditworthiness directly. Under the threat of an imminent default on its external debt, the Greek Socialist government voted the implementation of a fiscal consolidation programme consisting of austerity measures<sup>79</sup> aimed at a budget deficit reduction (Kouretas and Vlamis, 2010; Armnigeon and Baccaro, 2012b).

However, that was not enough to restore market confidence; the borrowing rates through the bond markets still remained prohibitive. The only option for the Greek government to avoid bankruptcy was to seek external help. After negotiations with its EU partners and the Troika, and an official request on 3 May 2010 addressed to the IMF, the Eurogroup, the EC and the ECB, accompanied by the "Memorandum of Economic and Financial Policies" according to which the Greek government committed itself to several austerity measures, tax increases, privatizations and reforms on the labour market<sup>80</sup>, a three-year loan of €110bn to Greece was approved, €30bn of which was contributed by the IMF and the remaining €80bn in a form of bilateral loans by the other euro area member partners<sup>81</sup>.

<sup>79</sup> For more details about the austerity measures see also Nelson et al. (2010) and Ardagna and Caselli (2012).

<sup>80</sup> See IMF Country Report No. 111 (2010) at <http://www.imf.org/external/pubs/ft/scr/2010/cr10111.pdf>

<sup>81</sup> See IMF Press Release No. 187 (2010) at <http://www.imf.org/external/pubs/ft/scr/2010/cr10111.pdf>, as well as Eurogroup's statement on 2 May 2010 at

Unfortunately, Greece was not to find its way back to private funding resources. The economy was hit by severe recession<sup>82</sup> while the Greek government demonstrated poor will and slow implementation tempo regarding the agreed reforms, even though each stand-by agreement review gave the green light for the next disbursement. A Task Force for Greece set up by the EC in July 2011, provided technical assistance to the Greek government, so that the latter could succeed in meeting the terms of the EU/IMF adjustment programme. In the end, Greece needed a second bailout loan from the Troika in the amount of €130bn in 2012 (this time EFSF came into action instead of bilateral loans)<sup>83</sup>.

At the same time, the Greek government agreed with the Troika on a public bond exchange undertaking. Private investors who held a total amount of around €206bn of Greek bonds had to voluntarily accept a 53.5% nominal value write-off, lower interest rates and longer maturities for the new bonds in this public bond swap<sup>84</sup>. The transaction was crowned with success, as the voluntary participation by the bond holders in the public bond swap reached a height of 83.5%<sup>85</sup>. Greece's total debt burden was now reduced by around €110bn, a necessary requirement for bringing the debt-GDP ratio down to 120.5% by 2020<sup>86, 87</sup>.

Since then the Greek government has tried to reduce the budget deficit through additional austerity measures. For their part the Euro area member states agreed to a reduction of the interest rate on EFSF loans and an extension of their maturity.

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[http://www.consilium.europa.eu/uedocs/cmsUpload/100502-%20Eurogroup\\_statement-sn02492.en10.pdf](http://www.consilium.europa.eu/uedocs/cmsUpload/100502-%20Eurogroup_statement-sn02492.en10.pdf) and <http://www.reuters.com/article/2010/05/02/us-eurozone-idUSTRE6400PJ20100502>

<sup>82</sup> The Greek economy is expected to have a real GDP growth rate of -4.4% in 2013 (-6.4% in 2012) and thus to remain for a sixth year in a row at negative growth rates according to Eurostat's data.

<sup>83</sup> See [http://ec.europa.eu/economy\\_finance/assistance\\_eu\\_ms/greek\\_loan\\_facility/index\\_en.htm](http://ec.europa.eu/economy_finance/assistance_eu_ms/greek_loan_facility/index_en.htm)

<sup>84</sup> For details for the so-called "Greek PSI" (Private Sector Involvement) see the Press Release of the Hellenic Republic's Ministry of Finance on 21 February 2012 at <http://www.minfin.gr/portal/en/resource/contentObject/id/7ad6442f-1777-4d02-80fb-91191c606664>

<sup>85</sup> See <http://www.iif.com/press/press+239.php>

<sup>86</sup> The Greek banks and the Greek pension funds suffered major losses from the PSI process, since a large number of their assets were invested in Greek PSI-bonds.

<sup>87</sup> Cabral (2010) believes that the real debt issue is the external debt problem and not the total public debt. High external indebtedness means that the interest of such debt goes to non-residents. The nation becomes poorer every time an interest payment takes place. Gros (2011) argues too that external debt is more important than public debt and the importance "...lies in the fact that even EZ nations retain full sovereignty over the taxation of their citizens". They both imply that an external debt restructuring or rescheduling is necessary if the nation wishes to restore its creditworthiness. Furthermore, a restructuring of private sector debt is necessary if a significant part of net external liabilities is private.



Moreover, they provided the Greek government with extra funds in order to proceed with a debt buyback operation and get rid of €20bn of its total debt<sup>88</sup>.

The Greek government has made brave attempts towards fiscal adjustment and is regarded one of the top performers in the euro area. Labour costs have fallen significantly, a basic step for the country to regain its lost competitiveness. Several reforms have been implemented and others are still to come. The low private sector debt and the low structural primary deficit are also some of the country's strengths.

However, the Greek economy still faces major challenges. Despite the noteworthy improvement; it still maintains the highest debt-GDP ratio and its current account is still profoundly negative. Its economy is still highly regulated and consumer-driven. The labour force participation rate is very low, and although exports have risen, the export sector still remains relatively small<sup>89</sup>. Greece has still not achieved a comeback to the bond market and the extent to which the country can move on without a new round of debt restructuring remains to be seen.

Table 9 on the next page shows some major macroeconomic indicators of the Greek economy over the last 5 years:

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<sup>88</sup> About Greece's debt buyback see the Press Release of the Hellenic Republic's Ministry of Finance on 3 December 2012 at , <http://www.minfin.gr/content-api/f/binaryChannel/minfin/datastore/d6/c1/39/d6c13911fb44eda3a0e90956cb934db48e16f285/application/pdf/Press+Release+-+December+03.pdf>, also <http://www.reuters.com/article/2012/12/12/us-greece-debt-idUSBRE8BB0I720121212> and <http://www.ft.com/intl/cms/s/0/10bf9240-3d23-11e2-9e13-00144feabdc0.html#axzz2TCk6b4zQ>

<sup>89</sup> See <http://www.lisboncouncil.net/publication/publication/86-the-2012-euro-plus-monitor-.html>

**Table 9: Macroeconomic data of the Greek economy**

Values in %	2007	2008	2009	2010	2011
General					
government deficit/surplus	3.5	-0.2	-3.1	-4.9	-7.1
General					
government debt	107.4	112.9	129.7	148.3	170.6
GDP real rate of growth	5.4	-2.1	-5.5	-0.8	1.4
Unemployment rate	8.3	7.7	9.5	12.6	17.7

Source: Eurostat

## 2.4. The case of Ireland

We have already discussed (see Sections 1.3 and 2.1) the origins of the Irish crisis. A huge real estate bubble was fed by a construction and property boom through aggressive lending by the Irish banks. The balance sheet of the Irish banks had been excessively expanded and the exposure of the whole Irish banking sector on the construction sector carried a risk of extreme dimensions in dormant status.

Furthermore, the total tax revenues collected by the Irish state were strongly interrelated with rising house prices throughout these years, since a large share was supported by asset-based taxes. The dramatic decline in house and property prices starting in 2007 brought about not only huge losses in the Irish banking sector, thus causing its collapse, but also shrinkage of the total tax revenues. Public finances were overloaded by the financial support provided by the Irish state to the Irish banking sector through guarantees and bank balance-sheet “detoxification” from troubled property assets, and the anaemic tax revenues did not help.

The general government deficit in 2010 rose to 30.9% of GDP from a 0.1% surplus in 2007, and the unemployment rate increased sharply from 4.7% in 2007 to 13.9% in 2010. What began as a financial crisis of a weak banking sector ended up to be the worst sovereign debt crisis of the country; the Irish public debt increased from a low

approximate 25.1% of GDP in 2007 to about 106.4% of GDP in 2011. After years of stable GDP growth, the Irish economy went into a recession, with the real GDP growth rate reaching 5.5% in 2009<sup>90</sup> (Honohan, 2009; Kelly, 2009; Honohan 2010; Lane, 2011; Whelan, 2011; Armingeon and Baccaro, 2012b).

The CRAs warned international investors of the country's macroeconomic vulnerabilities by downgrading its credit rating rapidly. Ireland was the second euro area member state to be shut out of the bond market and seek external financial assistance. Below we see the 10-year Irish bond yield:

**Chart 9: 10-year Irish bond yield**



Source: [www.tradingeconomics.com](http://www.tradingeconomics.com)

The Irish government and the Troika reached an agreement on 28 November 2010 for a bailout plan of €85bn<sup>91</sup>. The economic adjustment programme for Ireland was based, like Greece's, on austerity policies<sup>92</sup> such as reductions in public sector wages and cuts in public expenditure such as social transfers, whose implementation was fiercely fought against by the labour union (Armingeon and Baccaro, 2012b).

<sup>90</sup> Statistical data were collected from Eurostat's data base.

<sup>91</sup> For a detailed description on the joint financing package and the exact contribution each partner see [http://ec.europa.eu/economy\\_finance/assistance\\_eu\\_ms/ireland/index\\_en.htm](http://ec.europa.eu/economy_finance/assistance_eu_ms/ireland/index_en.htm)

<sup>92</sup> See [http://ec.europa.eu/economy\\_finance/articles/eu\\_economic\\_situation/pdf/2010-12-07-mefp\\_en.pdf](http://ec.europa.eu/economy_finance/articles/eu_economic_situation/pdf/2010-12-07-mefp_en.pdf)

However, Ireland managed to deal successfully with the problems of its ailing banking sector. Furthermore a reduction of the EFSF loan's margin of 292.5 bps for Ireland to zero<sup>93</sup> facilitated the Irish effort to return to the international debt market; something that Ireland succeeded in on 26 July 2012, when it managed to borrow €5.23bn by issuing 5-year bonds at an interest rate of 5.9%<sup>94</sup>.

On 13 March 2013 the Irish government was able to raise €5bn by selling 10-year bonds at an interest rate of 4.15%<sup>95</sup>. The progress in Ireland and the fact that it has regained partial market access have raised hopes that the country will be the first to step out of the economic adjustment programme by the end of the year.

The very open and highly competitive Irish economy (Ireland has very deregulated labour, product and services markets) has shown encouraging signs of a revitalized export-driven growth. But the whole picture is far from rosy. Ireland has still to come up against the highest structural fiscal deficit in the EZ and still has extremely weak fiscal indicators. Its oversized banking system and the fact that Ireland has its private debt in the euro area are both causes for concern<sup>96</sup>.

In Table 10 below we show some major macroeconomic indicators of the Irish economy over the last 5 years:

**Table 10: Macroeconomic data of the Irish economy**

Values in %	2007	2008	2009	2010	2011
General government deficit/surplus	0.1	-7.4	-13.9	-30.9	-13.4
General government debt	25.1	44.5	64.9	92.2	106.4
GDP real rate of growth	5.4	-2.1	-5.5	-0.8	1.4
Unemployment rate	4.7	6.4	12.0	13.9	14.7

Source: Eurostat

<sup>93</sup> See [http://europa.eu/rapid/press-release MEMO-11-602\\_en.htm?locale=en](http://europa.eu/rapid/press-release_MEMO-11-602_en.htm?locale=en)

<sup>94</sup> See <http://www.ft.com/intl/cms/s/0/378e474a-d716-11e1-8e7d-00144feabdc0.html#axzz2TCk6b4zQ>

<sup>95</sup> See <http://www.globalpost.com/dispatch/news/afp/130313/ireland-returns-10-year-bond-market>

<sup>96</sup> See <http://www.lisboncouncil.net/publication/publication/86-the-2012-euro-plus-monitor-.html>

## **2.5. The case of Portugal**

It could be said that the story of Portugal resembles that of Greece in some respects (see Sections 1.3 and 1.4). The country preserved public deficits far above the euro area's average throughout its presence in the EZ, which drove it to consequent high public debt accumulation.

The main origins of the emergence and evolution of the public deficit were low productivity growth and loss of competitiveness. Labour productivity grew on average by only 1.4% between 2001 and 2007. Not only did labour not manage to move to high productivity sectors after 2000, but the productivity growth within sectors was also poor. The low productivity disadvantage of the Portuguese economy was intensified even more by low educational coverage and the low quality of education.

ULCs in Portugal increased by an average growth rate of 2.73%, compared with 1.38% in the euro area. This was due to an increase in nominal wages in an environment of low productivity growth. The decline of competitiveness due to the overvaluation of labour had a long-term impact on the trade balance, resulting in the deterioration of the current account deficit, as exports decreased and imports increased conversely, allowing the formation of a credit-financed economy as cheap capital was plentiful in the country.

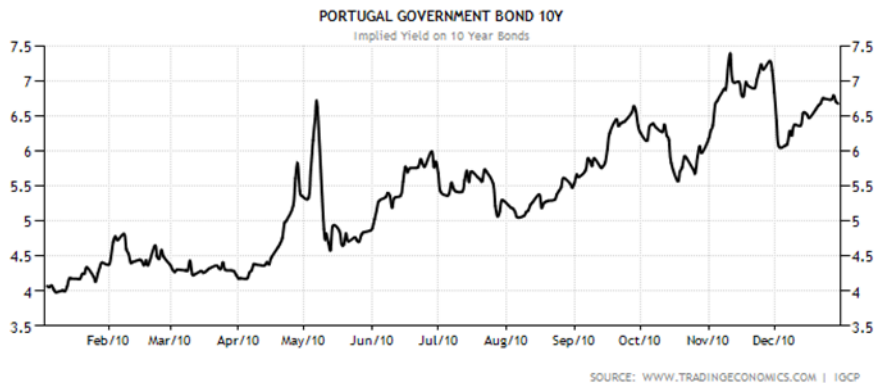
Another problematic aspect of the economy was the public sector, which used to live beyond its means. The state spent a lot on pensions and social protection benefits since the low interest rate environment inside the euro area made cheap external borrowing possible.

Another weakness of the Portuguese public sector is its structural inefficiency as well as its public management inefficiency, since there are too many employees for the amount of public service needed. This inefficient public sector has been a significant cost to the Portuguese economy so far (Bennet et al., 2008; Andrade and Duarte, 2011; Armingeon and Baccaro, 2012b; Baer et al., in Press).

The 10-year Portuguese bond yields started to experience upward pressures from early 2010 on. The risk-aversion feeling which had prevailed among the international investors by then and the dark clouds which had covered the sky of the Greek economy offered Portugal enough reasons to worry, since the general government gross debt had already exceeded 83.2% by the end of 2009 and the galloping -10.2%

public deficit did not augur well. As the situation in Greece escalated, the yields of Portuguese bonds escalated as well, as Chart 10 below shows:

**Chart 10: 10-year Portuguese bond yields**



Source: [www.tradingeconomics.com](http://www.tradingeconomics.com)

In May 2010 10-year Portuguese bond yields surpassed 6.5%<sup>97</sup> and in November 2010 almost reached 7.5%. In April 2011, with yields heading for 9.0%, Portugal's only way out left for sustainable debt refinancing was recourse to the Troika. On 7 April 2011, the Portuguese government contacted the Troika and an economic adjustment programme was elaborated and agreed in May 2011. The agreement included three-year financial support of €78bn until mid-2014.

A Memorandum of Understanding was also signed which encompassed fiscal policy objectives, objectives regarding financial sector regulation and supervision, fiscal-structural measures regarding the public financial management framework, the budgetary framework, public private partnerships, state-owned enterprises, privatizations, revenue administration, public administration and the healthcare system. It also included labour market and educational reforms, as well as reforms in the goods and services markets and the housing market<sup>98</sup>.

Armingeon and Baccaro (2012b) report that three austerity programmes have been introduced by the Socialist government in Portugal since February 2010. The austerity policies in Portugal have been supported by temporary parliamentary coalitions, but the trade unions and public have shown strong disapproval of them, due to the unpopular public wage decreases, pensions and social spending cuts they are based

<sup>97</sup> Arghyrou and Kontonikas (2012) find evidences that Portugal experienced contagion from Greece that period.

<sup>98</sup> See [http://ec.europa.eu/economy\\_finance/assistance\\_eu\\_ms/portugal/index\\_en.htm](http://ec.europa.eu/economy_finance/assistance_eu_ms/portugal/index_en.htm)

on<sup>99</sup>. Implementation of the austerity measures in Portugal has not been easy. At the time of writing our thesis, Portugal's constitutional court has turned down several pay cuts incorporated in the governmental budget plan of 2013<sup>100</sup>.

Below we show the developments of the most important macroeconomic indicators of the Portuguese economy during the last five years:

**Table 11: Macroeconomic data of the Portuguese economy**

Values in %	2007	2008	2009	2010	2011
General					
government deficit/surplus	-3.1	-3.6	-10.2	-9.8	-4.4
General					
government debt	68.4	71.7	83.2	93.5	108.1
GDP real rate of growth	2.4	0.0	-2.9	1.9	-1.6
Unemployment rate	8.9	8.5	10.6	12.0	12.9

Source: Eurostat

The Portuguese economy has undergone a very serious fiscal and external adjustment. The internal devaluation process helped the country to reduce significantly the general government deficit and the structural reforms facilitated a partial restoration of lost competitiveness. Yet, the very low GDP annual growth<sup>101</sup> rate and the very low export ratio remain two very important challenges for the country's economy. The very high private sector debt ratio and the fact that Portugal faces the largest annual debt refinancing needs are also causes for concern<sup>102</sup>. All things considered, it is not at

<sup>99</sup> See <http://www.ft.com/intl/cms/s/0/d66e3552-f5dd-11e0-bcc2-00144feab49a.html> and <http://www.economist.com/node/21563352>

<sup>100</sup> See <http://www.spiegel.de/politik/ausland/finanzkrise-portugals-sparhaushalt-teilweise-ungueltig-a-892850.html> and <http://www.reuters.com/article/2013/04/05/us-portugal-austerity-court-idUSBRE9340VJ20130405>

<sup>101</sup> According to Eurostat's data, the Portuguese economy has a (provisional) -3.2% real GDP growth rate for 2012 and an estimated -1.9% for 2013.

<sup>102</sup> See <http://www.lisboncouncil.net/publication/publication/86-the-2012-euro-plus-monitor-.html>

all sure that the Portuguese economy will manage to stand on its own feet again in the short term.

## 2.6. The case of Spain

When we look back at the situation of the Spanish economy in 2007, we can observe a very low debt-to-GDP ratio at 36.3%, a general government surplus of 1.9% and a capacity for the Spanish government to refinance its long-term debt through the international bond markets by paying only 4% (as of January 2007), as we will show in this subsection. Five years later, in 2012, the debt-to-GDP has more than doubled, the surplus has turned into a -9.4% deficit, and the Spanish 10-year bond yields are over 7.5% (as of August 2012). In addition, the unemployment rate has reached an alarming 25%, while the country has still had negative growth rates, since 2009 (with an exception in 2011). Table 12 and Chart 11 clearly portray the dramatic changes in the Spanish economy within five years:

**Table 12: Fiscal and macroeconomic indicators of the Spanish economy**

Values in %	2007	2008	2009	2010	2011
General government deficit/surplus	1.9	-4.5	-11.2	-9.7	-9.4
General government debt	36.3	40.2	53.9	61.5	69.3
GDP real rate of growth	3.5	0.9	-3.7	-0.3	0.4
Unemployment rate	8.3	11.3	18.0	20.1	21.7

Source: Eurostat



**Chart 11: 10-year Spanish bond yield**



Source: [www.tradingeconomics.com](http://www.tradingeconomics.com)

How could such a major turnaround have happened? The answers have already been implied in Sections 1.2 and 1.3. As in Ireland, a very serious real estate and banking crisis hit the Spanish economy, resulting in the collapse of the construction sector, high unemployment rates and the need for financial intervention by the state in order to avoid total collapse of a failing banking sector, which in turn caused the increase in public debt, the deterioration of the country's macroeconomic outlook and inevitably the loss of confidence among investors in the bond markets. The country also faced declining competitiveness problems (as discussed in the same subsections), since wages increased faster than productivity, a common characteristic for all the Southern European countries (Carballo-Cruz, 2011; Armingeon and Baccaro, 2012b).

The real estate boom, the excess private debt and the loss of competitiveness of the Spanish economy were the main destabilizing factors of the Spanish economy and constituted the lurking vulnerabilities which arose after the country's entry into the euro area, amplified by the cheap credit flow into the Spanish banking sector and the accommodation requirements of a growing population. Ortega and Peñalosa (2012) describe the vicious circle that emerged after the collapse in housing investment as follows:

*"...all the channels through which developments in the real estate sector spread to the rest of the economy were activated, contributing to amplifying the recession. The slowdown in household demand for housing in response to tighter financing conditions and to the downturn in confidence prompted a decline in housing starts and in residential construction, and a turnaround in house price, which began to fall*

*in 2008 Q2. The subsequent economy-wide reduction in output and employment coupled with the fall in real estate prices had a direct contractionary effect on disposable income and wealth. That triggered a series of second-round effects on residential investment, on activity in the sector and its ancillary industries, and, once more, on employment...”*

Armingeon and Baccaro (2012b) highlight the response of the Spanish government in the early stages of the crisis: it applied an expansionary fiscal policy in order to protect income and employment from the negative developments in construction activity. Income and employment suffered a heavy shock after the construction sector was unable to support jobs as in the boom years. The drop in house prices was another factor that negatively affected the income of private households. Increased public spending soon therefore was translated to an increase in the public deficit<sup>103</sup>.

But what really threatened the Spanish economy was the weakness of the banking sector; increasing NPLs and mortgages for which the collateral rapidly lost value were guarantees of massive losses in the bank balance sheets. Caja Castilla-La Mancha was the first local savings bank to be bailed out by the Spanish government in early 2009. The bank's liquidity problems cost the public budget around €9bn<sup>104</sup>.

In May 2009, the Spanish government established the Fund for Orderly Bank Restructuring (FOBR)<sup>105</sup>, the purpose of which was to rescue/restructure failing Spanish banks. The Spanish government set a limit of €120bn regarding FOBR's funding through the state budget.

On experiencing contagion effects from Greece, the Spanish Prime Minister Zapatero took a different turn on the economic policy and announced austerity measures in May 2010, with the aim of bringing the deficit down to 6.0% of GDP in 2011- in the meantime, the public deficit had climbed to 11.2 % of GDP in 2009<sup>106</sup>. From that moment on, both Zapatero's as well as the subsequent new government led by Mariano Rajoy, introduced a new cycle of successive labour market reforms and

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<sup>103</sup> Another negative similarity to Ireland was the strong correlation of part of the tax revenues to house prices. As prices fell, so did the corresponding tax revenues.

<sup>104</sup> See <http://www.guardian.co.uk/business/2009/mar/29/spanish-central-bank-rescues-caja-castilla-la-mancha> and <http://www.economist.com/node/13415830>

<sup>105</sup> See [http://www.frob.es/index\\_en.html](http://www.frob.es/index_en.html)

<sup>106</sup> See <http://www.ft.com/intl/cms/s/0/91ca42de-5d9e-11df-b4fc-00144feab49a.html> and <http://www.bbc.co.uk/news/10109275>

austerity measures, trying hard to calm the doubts of international investors about the macroeconomic prospects of the Spanish economy<sup>107</sup>.

As in other countries of the euro area periphery, whose economies were characterized by high public debt and excessive deficit, the measures taken were directed at cuts in unemployment benefit, lower social security contributions, a public wage freeze and increased taxation, along with promises for extension of the retirement age<sup>108</sup>.

Following Caja Castilla-La Mancha's rescue, another heavy shock for the Spanish economy was Bankia's bailout plan, which cost the state €19bn and resulted in the partial nationalization of the bank<sup>109</sup>. The fall of Spain's third-largest lender by assets subsequently led to a rise in Spanish government bond yields due to fears about channelling additional funds into the weak Spanish banks<sup>110</sup>.

In the meantime, a long restructuring process of the banking sector has been in progress since the establishment of FOBR in 2009, allowing banks to have access to public funds, once they have disclosed their real balance sheet weaknesses<sup>111</sup>.

Finally, the Spanish government officially turned to Eurogroup for financial assistance in June 2012<sup>112</sup>. The euro area members will provide €100bn through EFSF to the FOBR, which will then channel the necessary funds to the financial institutions concerned<sup>113</sup>.

The Spanish economy still has a long way to go to fight its way out of the crisis. Although the Spanish governments have managed to implement major reforms and structural adjustment measures and thus could increase significantly the exports of the Spanish economy, low growth trend and low fertility rate and high quotas of

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<sup>107</sup> That was to see upon its 10-year bond spreads, which exceeded 300bp in November 2010.

<sup>108</sup> See <http://www.ft.com/intl/cms/s/0/f27f02ae-78b0-11df-a312-00144feabdc0.html> and <http://www.abc.net.au/news/2011-12-31/spain-announces-more-austerity-measures/3753478>, also <http://www.guardian.co.uk/business/2012/jul/11/mariano-rajoy-spain-65bn-cuts> and <http://www.france24.com/en/20120210-spain-economy-unemployment-severance-limit-debt>

<sup>109</sup> See <http://www.bbc.co.uk/news/business-18213848>. Bankia will eventually need an additional €4.5bn in order to improve its weak capital adequacy ratios (see <http://www.ft.com/intl/cms/s/0/22f24b3a-f5d7-11e1-a6c2-00144feabdc0.html>).

<sup>110</sup> See <http://online.wsj.com/article/SB10001424052702303807404577431784097492256.html>

<sup>111</sup> See [http://www.frob.es/notas/Decision\\_com\\_europ\\_ingl.pdf](http://www.frob.es/notas/Decision_com_europ_ingl.pdf) and [http://www.bde.es/f/webbde/GAP/Secciones/SalaPrensa/InformacionInteres/ReestructuracionSectorFinanciero/Ficheros/en/presbe2011\\_6e.pdf](http://www.bde.es/f/webbde/GAP/Secciones/SalaPrensa/InformacionInteres/ReestructuracionSectorFinanciero/Ficheros/en/presbe2011_6e.pdf), also <http://www.bde.es/f/webbde/GAP/Secciones/SalaPrensa/InformacionInteres/ReestructuracionSectorFinanciero/Ficheros/en/notareformacajas230311e.pdf> and <http://www.bde.es/f/webbde/GAP/Secciones/SalaPrensa/InformacionInteres/ReestructuracionSectorFinanciero/Ficheros/en/mfo210211e.pdf>

<sup>112</sup> For the full text of De Guindos' formal letter to Jean-Claude Juncker see [http://www.lamoncloa.gob.es/IDIOMAS/9/Gobierno/News/2012/20120625\\_RequestAidBanks.htm](http://www.lamoncloa.gob.es/IDIOMAS/9/Gobierno/News/2012/20120625_RequestAidBanks.htm)

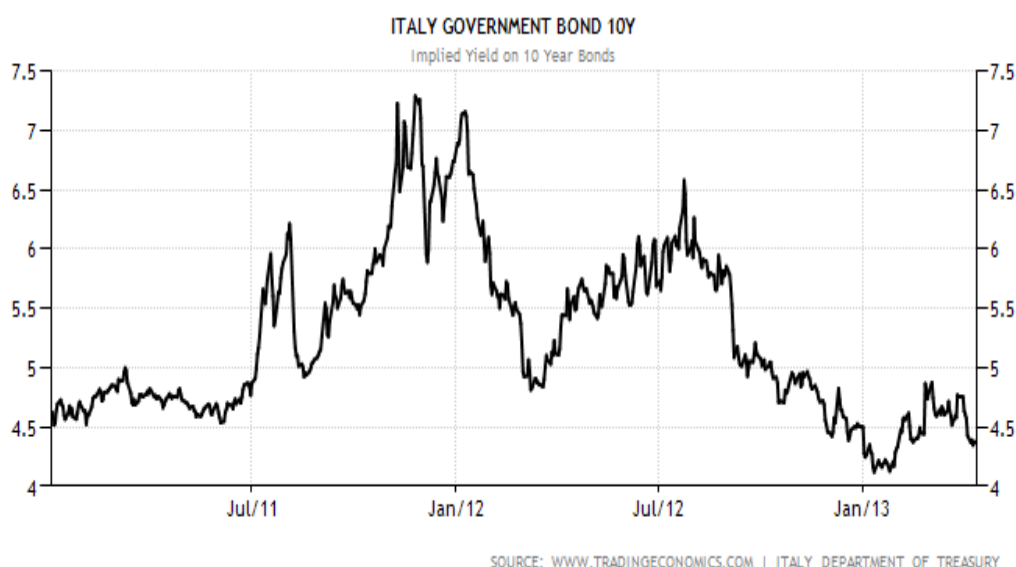
<sup>113</sup> For more details on the programme for Spain see [http://ec.europa.eu/economy\\_finance/assistance\\_eu\\_ms/spain/index\\_en.htm](http://ec.europa.eu/economy_finance/assistance_eu_ms/spain/index_en.htm)

unemployment, especially among young people, are two of the weaknesses of the economy<sup>114</sup>. A large quota of the workforce which was occupied in the construction sector before its collapse, finds it very difficult to move and get employment in another area of the economy. It also remains to be seen whether the €100bn financial aid will prove sufficient for the restructuring of the Spanish banking sector or whether extra funds will be required, representing an extra burden for the growing Spanish debt.

## 2.7. The case of Italy

While Italy has not yet been in need of external financial support, it constitutes one of the greatest concerns among European policymakers because of the enormous size of its economy. Italy is the third-largest economy in the euro area and an Italian bailout would be extremely expensive; the country is simply “too-big-to-fail”. That’s why everybody watched with bated breath the rising Italian spreads which exceeded 300bp in July 2011, reached almost 500bp in November 2011 and only through the ECB’s sovereign bond purchases in the secondary markets managed to fall under 300bp again in October 2012 (see below):

**Chart 12: 10-year Italian bond yield**

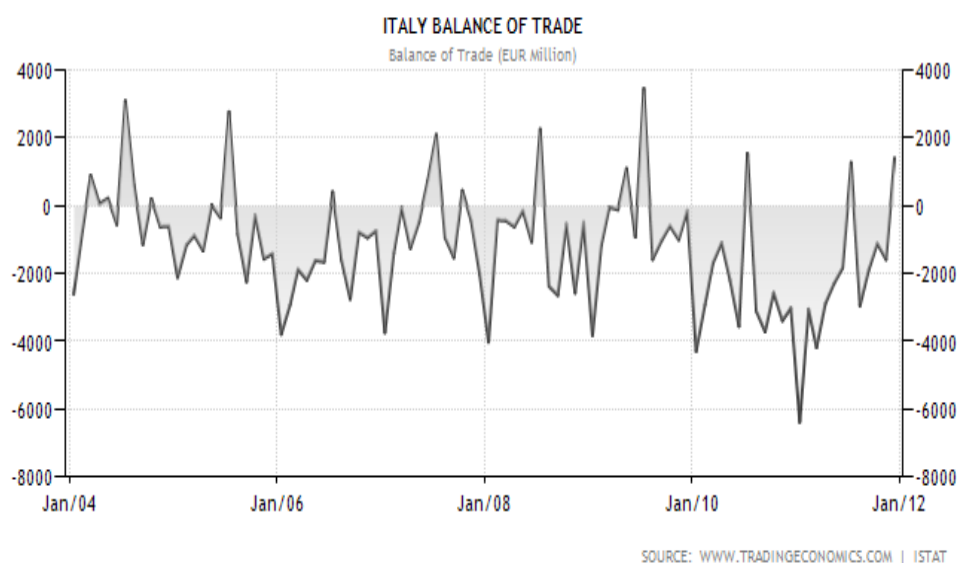


Source: [www.tradingeconomics.com](http://www.tradingeconomics.com)

<sup>114</sup> For an overall assessment of the Spanish economy see <http://www.lisboncouncil.net/publication/publication/86-the-2012-euro-plus-monitor-.html>

As already mentioned in Section 1.3, the competitiveness of the Italian economy was hit in the years following the introduction of the euro, due to the decline in competitiveness of Italian products in the international markets as a result of REER appreciation and wage increases above the EU mean (Armingeon and Baccaro, 2012b). The Italian economy demonstrated very low trends in productivity increases and its export sector lost a significant market share<sup>115</sup> resulting in an increased trade deficit, as we demonstrate below:

**Chart 13: Italy's balance of trade (in EUR millions)**



Source: [www.tradingeconomics.com](http://www.tradingeconomics.com)

What is more, the growth of the Italian economy over the last 10 years is disappointing, far below the EU average. The slow economic growth, a public debt over 100% ever since the country's entry into the EZ and persistent public deficits represent major risk factors in times of decreased confidence and low-risk investment preferences among international investors in a highly volatile investment environment:

<sup>115</sup> Larch (2005) identifies the loss of market share of the Italian economy as a symptom of the “*unfavourable product specialization of the Italian economy*”. He argues that Italian industry remained too focused on production in low-skilled labour intensive sectors, the products of which are characterized by below-average growth in global demand.

**Table 13: Fiscal and macroeconomic indicators of the Italian economy**

Values in %	2007	2008	2009	2010	2011
General					
government deficit/surplus	-1.6	-2.7	-5.4	-4.5	-3.9
General					
government debt	103.3	106.1	116.4	119.2	120.7
GDP real rate of growth	3.5	0.9	-3.7	-0.3	0.4
Unemployment rate	6.1	6.7	7.8	8.4	8.4

Source: Eurostat

Italy displayed the typical weaknesses of the European periphery countries. Furthermore, the country's dysfunctional public system with weak performance of its public institutions is also characterized by bureaucratic and corrupt administrative structures; the inability to combat the noteworthy tax evasion is a major example. But private investment and consequent growth are also hindered by an overregulated private and public economy with a labyrinthine system of legislation and regulations. The high level of protectionism that many professions enjoy also represents a heavy burden to a modern structural transformation of the Italian economy<sup>116</sup>.

In the end, Italy experienced contagion from Greece<sup>117</sup> and had to see the creditworthiness of its government bonds suffer successive downgrades by the CRAs<sup>118</sup>. Trying to regain market confidence and prevent a further deterioration of the Italian debt's creditworthiness, the Italian parliament approved severe austerity

<sup>116</sup> See <http://www.europeanbusinessreview.com/europeanfinancialreview.com/wp-content/uploads/2012/04/TEFR-AprilMay2012-The-European-Debt-Crisis-2011-12-The-Case-of-Italy.pdf> and <http://www.telegraph.co.uk/finance/financialcrisis/8880410/Italys-debt-crisis-doomed-by-corruption-bloated-bureaucracy-and-poor-productivity.html>, also <http://www.geopoliticalmonitor.com/the-long-road-of-italian-economic-reform-4710> and <http://www.heritage.org/index/country/italy>

<sup>117</sup> For an empirical analysis see Arghyrou and Kontonikas (2012).

<sup>118</sup> See <http://www.nytimes.com/2013/03/09/business/global/09iht-fitch09.html?ref=fitchratingsinc> and [http://www.moodys.com/research/Moodys-downgrades-Italys-government-bond-rating-to-Baa2-from-A3--PR\\_250567](http://www.moodys.com/research/Moodys-downgrades-Italys-government-bond-rating-to-Baa2-from-A3--PR_250567), also <http://www.guardian.co.uk/business/2011/oct/04/italy-downgrade-moodys-debt-crisis>

measures, in order to reduce public spending drastically. As in Spain (see 2.6), a wage freeze in the public sector and reduction of social security spending ensured cuts in central government expenditure. A Value Added Tax (VAT) increase (1%), taxation of financial assets (20%) and several further measures aimed to give public revenues an invigorating boost. Furthermore, significant reform measures aimed at improvement of the sustainability of Italy's pension system were taken by strengthening eligibility requirements<sup>119</sup>

It is still unclear whether the Italian economy has definitively managed to calm down the markets concerning their ability to withstand negative external macroeconomic shocks and therefore their ability to honour their debt obligations. According to the 2012 Euro Plus Monitor<sup>120</sup>, the Italian economy has demonstrated a successful fiscal adjustment so far and displayed a primary structural fiscal surplus. The low private sector debt ratio also counts among the plus points of the economy. Nevertheless, the high public debt ratio, the negative current account and the relatively low average debt maturity are factors which increase the vulnerability of Italian spreads to volatility.

## **2.8. The case of Cyprus**

The small Cypriot economy had managed to drop its debt-to-GDP ratio down to 48.9% by the end of 2008. However, Cyprus once again started to run high general government deficits as a percentage of GDP over the last three years, as a result of a drop in economic activity, as we see on the next page:

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<sup>119</sup> See <http://www.nytimes.com/2011/12/05/world/europe/mario-monti-of-italy-calls-cabinet-to-consider-austerity-measures.html>

<sup>120</sup> See <http://www.lisboncouncil.net/publication/publication/86-the-2012-euro-plus-monitor-.html>

**Table 14: Fiscal and macroeconomic indicators of the Cypriot economy**

Values in %	2008	2009	2010	2011	2012
General					
government deficit/surplus	0.9	-6.1	-5.3	-6.3	-6.3
General					
government debt	48.9	58.5	61.3	71.1	85.8
GDP real rate of growth	3.6	-1.9	1.3	0.5	-2.4
Unemployment rate	3.7	5.4	6.3	7.9	11.9

Source: Eurostat

As of 2012, Cyprus's structural fiscal deficit was very high and the vulnerability of the island's economy to financial shock was extremely alarming due to the current account deficit, the high private sector indebtedness and the enormous size of the banking sector<sup>121</sup>. But the main cause that triggered the current crisis was the huge exposure of the two largest Cypriot Banks to the Greek sovereign debt and the rapid increase of their NPLs due to the worsening of financial conditions in the private sector (both in Cyprus and Greece), which led in turn to rising impairments and increasing provisions.

The agreement on the Greek PSI forced Bank of Cyprus and Laiki Bank to write off about 50% of the value of the Greek government bonds they hold in their books<sup>122</sup>. Table 15 on the next page shows the exact exposure of the two banks to Greek sovereign debt:

<sup>121</sup> The banking sector in Cyprus held total assets of 896% of GDP in 2010 and the size of the banking system in Cyprus is sevenfold the GDP (Stephanou, 2013). See also <http://www.lisboncouncil.net/publication/publication/86-the-2012-euro-plus-monitor-.html>

<sup>122</sup> See <http://www.navigator-consulting.com/articles/cypriot-bank-exposure-to-the-greek-debt-crisis/17>



**Table 15: Exposure of Cypriot Banks to Greek Government Bonds (GGBs) in €bn**

<b>GGBs, 9M 2011</b>	Bank of Cyprus	Laiki Bank	Hellenic Bank	Total
GGBs, nominal value	2.088	3.084	0.110	5.282
GGBs, impairment	-1.046	-0.216	-0.055	-1.317
Write-Down (net of revaluation)	-50%	-21%*	-50%	24.93%

\* Write down as of QIII 2011, not including 50% PSI agreed on October 26th

Source: [www.navigator-consulting.com](http://www.navigator-consulting.com)

Table 16 illustrates the NPL-risk factor to which the Cypriot Banks are exposed:

**Table 16: Non-Performing Loans (NPLs) of Cypriot banks, in €bn**

<b>NPLs, 9M 2011</b>	Bank of Cyprus	Laiki Bank	Hellenic Bank
NPLs stock	-1.038	-1.077	-0.679
NPLs provisions (write-down)	-0.295	-0.103	-0.101
NPLs (%)*	8.60%	8.70%	13.52%

\*By the end of 2011, Moody's and Blackrock increase the percentage of NPLs in Cyprus up to 15-25%

Source: [www.navigator-consulting.com](http://www.navigator-consulting.com)

The downgrades of the Cypriot sovereign bonds and the rising spreads, both negatively reinforced by the agreement of the Greek PSI, led to the country's shut-out from the bond markets. Unable to refinance its maturing debt at viable interest rates, the Cypriot government agreed a 4.5-year €2.5bn loan with Russia with a yield of 4.5% on 5 October 2011<sup>123</sup>. But the weak oversized banking sector of the country would suck all the air in the Cypriot economy out of its lungs. The Cypriot banks could no longer make use of eligible collaterals in order to draw liquidity from the ECB and the Cypriot state was running out of money.

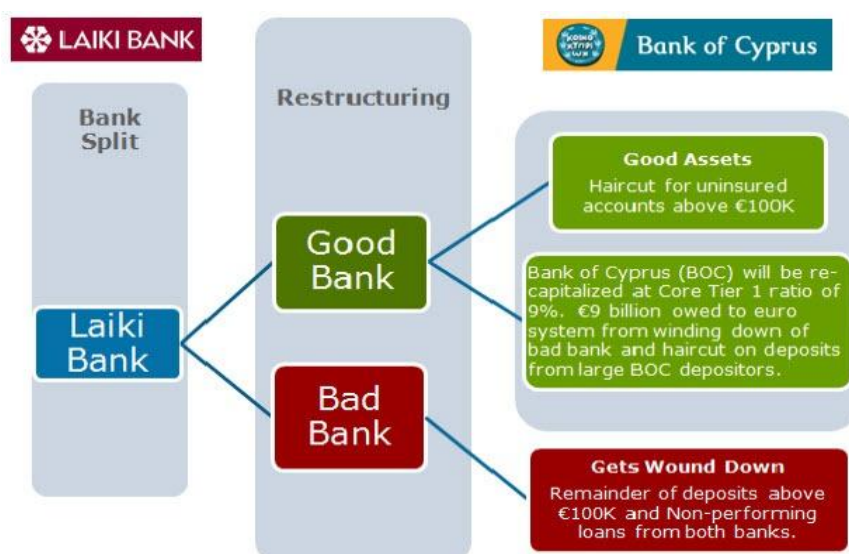
After several months of negotiations between the country and Troika representatives, Cyprus became the fifth euro area member state to be granted financial support. A

<sup>123</sup> See <http://www.bloomberg.com/news/2011-12-23/cyprus-russia-sign-2-5-billion-euro-loan-deal-in-moscow-1-.html>. For the details of the Russian loan to Cyprus in 2011 see <http://www.euractiv.com/europes-east/russia-bails-cash-strapped-cypru-news-508182>

bailout package of €10bn was agreed between the Cypriot government and the Troika on 25 March 2013, €9bn of which is provided by the ESM and €1bn of which will be the IMF's contribution<sup>124</sup>. The money will cover state needs from 2013 to 2016, including banking sector recapitalization and the refinancing of the medium- and long-term debt.

The agreement with the Troika also includes the liquidation of Laiki Bank through separation into a “good” and a “bad” bank, with the “good” bank to be merged with Bank of Cyprus at a future point in time. The “bad” bank will hold non-viable assets, such as NPLs, from both banks and the losses will be covered by the shareholders, the bondholders and the large depositors, owning deposits of over €100,000<sup>125</sup>. Figure 2 demonstrates the general Laiki and Bank of Cyprus restructuring scheme:

**Figure 2: Restructuring of Laiki Bank and Bank of Cyprus**



One half of bank deposits in Cyprus are housed in Laiki Bank or Bank of Cyprus.

Source: Wells Fargo Bank, 2013

<sup>124</sup> For further details see ESM's Press Release No. 3 (2013) at <http://www.esm.europa.eu/pdf/ESM%20Press%20Release%20ESM%20Board%20of%20Governors%20grants%20stability%20support%20to%20Cyprus1.pdf>, also <http://www.reuters.com/article/2013/04/12/us-eurozone-cyprus-idUSBRE93B0BY20130412> and <http://www.guardian.co.uk/business/2013/apr/12/cyprus-bailout-key-details-breakdown>.

<sup>125</sup> It is not certain whether beneficiaries of unsecured deposits (over €100,000) in Laiki Bank will ever get money back, while those of Bank of Cyprus may face losses up to 60% (See <http://www.economist.com/blogs/charlemagne/2013/03/cyprus-bail-out> and <http://www.ft.com/intl/cms/s/0/4a1bb1d6-9926-11e2-af84-00144feabdc0.html#axzz2TIF0fIy4>). For further information see also <http://online.wsj.com/article/BT-CO-20130326-708329.html> and <https://www.wealthmanagementinsights.com/aspx/detail.aspx?pid=387>

The macroeconomic outlook for Cyprus is not good. The recession, into which the Cypriot economy is sliding more deeply, is a major issue, and the fiscal austerity the Cypriot government has had to follow could lead the rising unemployment rate to even higher levels. The banking sector, whose contribution to GDP amounted to 69% in 2009, has suffered a severe blow, calling the role of Cyprus as an international financial centre into question. A change in the business model may be necessary, since growth was mostly based on the banking sector and financial services<sup>126</sup> (Solana, 2013; Stephanou, 2013;). Below we present growth and fiscal forecasts for the next four years in Cyprus:

**Table 17: Growth and fiscal projections of Cypriot economy**

Values in %	2013	2014	2015	2016
Real GDP growth	-8.7	-3.9	1.1	1.9
Gross government debt-to-GDP-ratio	109.0	123.0	126.3	121.9
Government deficit-to-GDP ratio	-6.0	-7.9	-5.7	-2.5

Source: The Guardian

<sup>126</sup>

Also see [http://www.ey.com/Publication/vwLUAssets/EEF\\_Sprin2013\\_Cyprus/\\$FILE/EEF\\_Sprin2013\\_Cyprus\\_LR.pdf](http://www.ey.com/Publication/vwLUAssets/EEF_Sprin2013_Cyprus/$FILE/EEF_Sprin2013_Cyprus_LR.pdf) and <http://www.reuters.com/article/2013/04/03/us-cyprus-bailout-economy-idUSBRE9320PK20130403>

### **Chapter 3: A critical approach to the policy responses and some policy recommendations**

The European political leaders have been trying hard to effectively address the debt crisis in the euro area. They have also turned for financial and technocratic assistance to the IMF, a supranational organization which has not had any kind of involvement in the internal affairs of the EZ since the existence of the latter. Moreover, they have relied on ECB's non-standard monetary policy measures in order to succeed in bringing the galloping crisis under control to a certain extent.

However, several lines of criticism have been developed, the focus of which could be summarized in the following three areas, which are more or less interrelated: adherence to the implementation of austerity policies, the lack of determination to proceed faster towards deeper political and fiscal consolidation, and the ECB's rigidity in respect of bypassing -or even modifying- its original mandate, despite its unconventional action.

Having run deficits for years and no longer being in a position to use the currency-devaluation-tool in order to invigorate the long lost competitiveness of their economy or to print money in order to cover the budget deficit, the Southern European countries seem to have been left with no other option than to cut spending, increase taxation and compress wages to levels that will increase the demand for domestic products on one hand and at the same time render the exports of domestic companies abroad more competitive, targeting a reversal of flow in the trade balance and the formation of primary surpluses (Sinn, 2013; Sinn and Valentinyi, 2013).

However, the internal devaluation policy does not seem to work properly. In terms of competitiveness one can observe only marginal gains; on the contrary, nominal growth has been depressed to critical levels and the same also applies to internal demand and to a great extent to public revenues. Decreasing wages and rising unemployment rates are strong indicators of a demand crash, as they guarantee a significant decrease in the purchasing power of private households and their subsequent spending. Actually, austerity measures and internal devaluation policies appear to feed the recession and thus to create a vicious cycle, since additional measures are required to stabilize the public deficits. (Armingeon and Baccaro, 2012a and 2012b).

An additional source of risk is also the current financial environment in which internal devaluation takes place: the heavy indebtedness of the private sector and the ongoing deleveraging process. The attempted fiscal consolidation in such an environment, in which a credit crisis co-exists and no devaluation option is available, can generate deflation, which in turn can lead to depression when declining prices persist (Peon and Rey, 2013). What is more, the CRAs currently consider the decline in GDP and the continuing reduced growth as the most important factor of sustainability of the sovereign debt and accordingly give out their rates; countries that suffer low growth cannot see their bond yields falling.

The European political leadership has been giving the impression of being a cumbersome vehicle for political decisions. The EU's response to the crisis has been almost always too late, always inadequate. National and local interests have proved insurmountable obstacles for the European partners so far to agree on what would be the best for the euro area as a whole, even if it would negatively affect the economic interests of a specific nation or of specific social groups; at best we have had to make do with compromises which came under the "the lesser of two evils" heading.

National governments of the overindebted countries have appeared unwilling to try hard to persuade their citizens of the necessity of unpopular but necessary political measures, others -mainly Germany- have developed a punitive attitude towards these countries and have downgraded the significance of an economically robust EZ as a whole from the debate by letting feelings of hostility grow among the locals towards the "lazy" and "corrupt" south Europeans.

Alessandrini et al. (2012) primarily blame Germany (France also, but to a lesser degree) for having "have failed to understand the nature of the sovereign debt crisis" and suggest that the adjustment of external imbalances in the euro area should be fixed mainly "through an expansion of aggregate demand" in Germany and the other Northern euro area members "rather than forcing the South to curtail its demand"<sup>127</sup>.

It seems impossible in the long run to achieve stability in the euro area when there are countries which permanently run either surpluses or deficits, and that is something that is easily forgotten in the absence of a politically unified euro area. Moreover, the failure in the process of political integration in the euro area magnifies the adverse effects arising from the resulting fiscal diversification. There is no route to common

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<sup>127</sup> Van Treeck (2011) shares also the same belief and accuses Germany of "following an essentially neomercantilist growth strategy" at the same time.

borrowing at a shared interest rate, so some countries can benefit from historically low interest borrowing rates while others find themselves on the brink of insolvency because a temporal liquidity problem has been converted to a solvency problem due to the extremely high borrowing rates offered.

Similarly, the absence of a common tax base and of a payment transfer mechanism does nothing more than perpetuate the abovementioned problem, as no capital can flow into a country that faces a temporal funding gap, meaning that it does not have the time necessary in order to fix any pre-existing fiscal and/or macroeconomic weaknesses. A common fiscal policy can only emerge through the deepening of the political integration process, which in turn would lead to a unified euro area in terms of policymaking and economic governance and to fiscal consolidation.

The ECB's response to the sovereign debt crisis in the euro area has been a combination of unconventional measures which include inter alia a lower interest rate policy and a loosening of the quality of the collaterals accepted as liquidity provision instruments (see Section 2.2).

However, the ECB has been also blamed either for not having done enough or even for obstructing a successful confrontation of the sovereign debt crisis. The ECB's mandate<sup>128</sup> is considered by many as too narrowly focused on price stability. The support of growth and the target of full employment by creating jobs do not seem to be additional goals of the ECB. The ECB has not so far had any supervisory functions over the banking sector, nor can it act as a lender-of-last-resort in times of financial crisis by constituting the Government's banker<sup>129</sup>. The monetarist approach of the ECB to central banking is seen at times of crisis as part of and not a solution to the problem (Richter and Wahl, 2011).

Armingeon and Baccaro (2012b) regard the ECB's emphasis on austerity as questionable, due to its weak theoretical expansionary fiscal contraction<sup>130</sup> (EFC) background. They argue that the evidence behind the idea that fiscal solvency can be enhanced through austerity measures is weak and that the whole empirical and theoretical foundation of that idea is unstable. In another paper (2012a) they support

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<sup>128</sup> For more on the tasks of ECB see <http://www.ecb.int/ecb/orga/tasks/html/index.en.html>. Many believe that it took ECB too much time to lower interest rates (i.e. Richter and Wahl, 2011) and that happened because it remained too focused on its inflation targets.

<sup>129</sup> After all, there is no uniformed government in the euro area so far.

<sup>130</sup> Giavazzi and Pagano (1990) claimed that the private sector would raise current and planned consumption and thereby a whole economic expansion would take place, if it viewed the reduced share of government spending in GDP as a sign of a higher future permanent income for households.

the opinion that the ECB should tolerate a higher level of inflation and continue the quantitative easing policy for the return to nominal growth for the EZ to become more achievable<sup>131</sup>.

De Grauwe (2010a) also made some very caustic comments against the ECB's reliance on the three big CRAs' evaluation of the country risk of the euro area members. He even characterizes the ECB as "a primary source of financial instability in the Eurozone", because of its refusal to create and organize an independent body of financial experts who would analyze the creditworthiness of the euro area member states. He argues that this is the best way for the ECB to avoid the false evaluations issued by the CRAs.

Taking into account all these factors, we could propose some recommendations for further future action against the debt problem in the euro area. The most necessary as well as urgent step towards more effective management of the sovereign debt crisis would be that of faster and deeper political integration, and through that transformation of the monetary union into fiscal union. The deeper political and fiscal integration presupposes the cession and partial loss of national sovereignty, especially in terms of fiscal and budgetary policy. We believe that this is the only way to attach the necessary legitimacy to every political decision. It would also open the door to counter-cyclical and pro-growth policies and would make easier the mutualization of European through a joint issuance of Eurobonds<sup>132</sup>, allowing euro member states to benefit from lower borrowing interest rates; at the same time the political union would guarantee elimination of the moral hazard and free rider problem. Pisani-Ferry (2012) summarizes the advantages of the Eurobonds as follows:

*"...First a new, safer asset class would be created. Eurobonds should constitute the prime investment vehicle for banks and other investors in search of safety. Second, states able to issue under the scheme would benefit from favourable borrowing conditions. Banks would be more secure and states would be protected from self-fulfilling solvency crises. Third, by subscribing to Eurobonds and their necessary counterpart – a thorough scrutiny of national public finances – the members of the*

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<sup>131</sup> They argue that the rise in inflation would be higher for the core countries than for the peripheral ones and that would be a necessary step towards the reduction of the competitiveness gap between the euro area's different economies.

<sup>132</sup> There are several proposals for Eurobonds issuing and for the creation of a European Debt Agency. For some ideas on the topic see Favero and Missale (2010 and 2012), Bank et al. (2011), Brunnermeier et al. (2011), Delpla and von Weizsäcker (2010 and 2011), Hellwig and Philippon (2011), Messori (2011), Muellbauer (2011), Claessens et al. (2012).

*euro area would signal their willingness to accept the full consequences of participation in the monetary union...”*

The ensuing political and fiscal federalism would let a fresh wind of democracy blow over the euro area member states and would strengthen the vision of a completely unified euro area by eliminating the current mistrust and the euroscepticism which appear to prevail. Of course, the ethnological, cultural and linguistic heterogeneity of the European continent in comparison to that existing in the US makes the emergence of a United States of Europe difficult, but at least a stronger centralized decision-making mechanism would replace the present-day diversity of opinions.

Another proposal would be for ECB to review its mission in the EZ. The ECB has proved very efficient in harnessing inflation during all these years but now the challenges far exceed maintaining a stable rate of inflation. We are of the opinion that now more than ever the ECB should establish a lender-of-last-resort facility and be able to provide financing whenever needed and thereby send a strong signal to the markets that no euro area member state would ever be in the position of not being able to repay its debts (Darvas, 2012; Pisani-Ferry, 2012). We find that this is a crucial factor to restore lost confidence in relation to European debt in the bond markets.

We also believe that any inflationary pressures arising in that case would neither damage the ECB's credibility as a central bank nor harm the role of the euro as a reserve currency; the opposite would be the case.

Additionally, the ECB could develop efficient macro-prudential instruments for macroeconomic supervision with the aim of preventing pro-cyclical behavior and excessive risk-taking. In this manner, inflation of asset prices and bubbles could be more efficiently countered and systemic risks could be more easily avoided. It could also broaden its original mandate, in order to include growth and unemployment as its additional objectives (Richter and Wahl, 2011).

Finally, the ECB in cooperation with the political leadership in the euro area should undertake the key role of creating a banking federation through which centralized regulation and supervision would be exercised and a euro area-wide deposit guarantee would be provided. By assuming this role and setting limits at the same time in bank holdings of government debt, it could play a crucial role in breaking the interdependence of banks and sovereigns and in addressing the interdependence across countries (Darvas et al., 2011; Darvas, 2012; Pisani-Ferry, 2012).



## Conclusions

In our thesis we have investigated and analysed the factors that lie, as root causes, behind the present crisis regarding the sovereign debt in the euro area. We have shown that the European sovereign debt crisis was the final phase of a long process, during which fiscal indiscipline, the formation of macroeconomic imbalances and the high level of indebtedness in the private sector constituted the primary risk dynamic. At the same time, the non-existence of a single fiscal policy, the one-size-fits-all monetary policy of the ECB, the absence of institutional mechanisms for crisis management at European level and the collapse of the banking sector in some cases were amplifying factors which accelerated the onset of the crisis. It took only a mortgage market failure in the US to disclose the fiscal weaknesses of many euro area states and the imperfect institutional construction of the EZ as a whole in terms of political and economic governance.

The expansion of the subprime crisis to Europe inaugurated a period of risk aversion and mistrust in the ability of many countries to keep honouring their external debt obligations. In this thesis we have examined the difficult position in which many euro area states found themselves, having been unable to borrow from the markets at sustainable interest rates, and we have studied the countermeasures which the EC, the ECB and the IMF have taken in close cooperation, in order to limit the crisis and stabilize the situation in the bond markets. The euro area leadership acted with serious delay in the first stages of the crisis and was unable to agree on a common policy line; only after the IMF's participation in the bailout packages did the decision-making process begin to speed up.

The dramatic impact that the structural adjustment programmes had on GDP, mainly due to sudden and heavy cuts in public spending and increased taxation, raises serious concerns on the extent to which these programmes can be continued without posing a risk of a further increase in the unemployment rate or even a total collapse of economic activity. We also find that the rigid monetary policy of the ECB fails to address the problem fully and only buys time, while the lack of a common fiscal policy prevents the design of a payment transfer mechanism, through which funds from the surplus countries of the euro area could be transferred to those in deficit every time needed. Unless deeper political and fiscal integration takes place, a more

counter-cyclical fiscal policy is followed, and a broader mandate of the ECB supersedes the original one, we fear that the EMU is doomed to fail sooner or later.

## **LIST OF ABBREVIATIONS**

- ABS: Asset-Backed Security
- ADB: Asian Development Bank
- ADBI: Asian Development Bank Institute
- BIS: Bank of International Settlements
- BoE: Bank of England
- BSA: Balance Sheet Approach
- CBO: Collateralized Bond Obligation
- CDO: Collateralized Debt Obligation
- CEPR: Centre for Economic Policy Research
- CEPS: Centre for European Policy Studies
- CLO: Collateralized Loan Obligation
- CRA: Credit Rating Agency
- CSO: Collateralized Synthetic Obligation
- EC: European Commission
- ECB: European Central Bank
- ECCL: Enhanced Conditions Credit Line
- ECSC: European Coal and Steel Community
- ECOFIN: Economic and Financial Affairs Council
- ECU: European Currency Unit
- EEC: European Economic Community
- EFC: Expansionary Fiscal Contraction
- EFSM: European Financial Stabilization Mechanism
- EFSE: European Financial Stability Facility
- EZ: Eurozone
- EMU: European Monetary Union
- ESM: European Stability Mechanism

FOBR: Fund for Orderly Bank Restructuring

GDP: Gross Domestic Product

GGB: Greek Government Bond

HICP: Harmonized Index Consumer Prices

IMF: International Monetary Fund

LTRO: Long Term Refinancing Operation

MRO: Main Refinancing Operation

MBS: Mortgage-Backed Security

NAMA: National Asset Management Agency

NBER: National Bureau of Economic Research

NEER: Nominal Effective Exchange Rate

NPL: Non-Performing Loan

OAH: Originate and Hold

OCA: Optimum Currency Area

OECD: Organization for Economic Co-operation and Development

OMT: Outright Monetary Transactions

OTD: Originate to Distribute

PSI: Private Sector Involvement

REER: Real Effective Exchange Rate

SMP: Securities Markets Programme

SPG: Stability and Growth Pact

ULC: Unit Labour Cost

US: United States

VAT: Value Added Tax

## REFERENCES

- Acharya, V. V., Drechsler, I., & Schnabl, P.,** (2011), "A pyrrhic victory?-bank bailouts and sovereign credit risk", NBER Working Paper No. 17136, available at: <http://www.nber.org/papers/w17136>
- Acharya, V. V., & Schnabl, P.,** (2010), "Do Global Banks Spread Global Imbalances? Asset-Backed Commercial Paper during the Financial Crisis of 2007–09", *IMF Economic Review*, Vol. 58, No. 1, pp. 37-73, available at: <http://www.palgrave-journals.com/imfer/journal/v58/n1/pdf/imfer20104a.pdf>
- Acocella, N.,** (2011), "The deflationary bias of exit strategies in the EMU countries", Università degli Studi di Roma "La Sapienza", Working Paper No. 82, available at: [http://eprints.bice.rm.cnr.it/3248/1/WPaper\\_No\\_82.pdf](http://eprints.bice.rm.cnr.it/3248/1/WPaper_No_82.pdf)
- Afonso, A.,** (2010), "Euro area fiscal policies: Response to the economic crisis", In van Riet, A., (Eds.), *Euro area fiscal policies and the crisis*, ECB Occasional Paper No. 109, pp. 22-34.
- Alessandrini, P., Fratianni, M., Hughes-Hallett, A., & Presbitero, A. F.,** (2012), "External imbalances and financial fragility in the euro area", Università Politecnica delle Marche, Money and Finance Research group, Working Paper No. 66, available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2055468](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2055468)
- Alexakis, P.,** (2011), "Οι καινοτομίες στη νομισματική πολιτική στην ευρωζώνη από το 2007 έως σήμερα", In Hardouvelis, G.A., & Gortsos, C.V., (Eds.), *Η διεθνής κρίση, η κρίση στην ευρωζώνη και το ελληνικό χρηματοπιστωτικό σύστημα*, Ελληνική Ένωση Τραπεζών, Αθήνα, pp. 187-189.
- Allard, C., & Everaert, L.,** (2010), "Lifting Euro Area Growth: Priorities for Structural Reforms and Governance", IMF Staff Position Note No. 19.
- Allen, F., & Carletti, E.,** (2010), "An Overview of the Crisis: Causes, Consequences, and Solutions", *International Review of Finance*, Vol. 10, No. 1, pp. 1-26.
- Allen, M., Keller, C., Rosenberg, C. B., Roubini, N., & Setser, B.,** (2002), "A balance sheet approach to financial crisis", IMF Working Paper No. 210.
- Andrade, J. S., & Duarte, A.,** (2011), "The fundamentals of the Portuguese crisis", *Panoeconomicus*, Vol. 58, No. 2, pp. 195-218.
- Ardagna, S., & Caselli, F.,** (2012), "The political economy of the Greek debt crisis: a tale of two bailouts", London School of Economics and Political Science, Centre for

Economic Performance, available at:  
<http://personal.lse.ac.uk/casellif/papers/greece.pdf>

**Arezki, R., Candelon, B., & Sy, A.,** (2011), “Sovereign rating news and financial markets spillovers: Evidence from the European debt crisis”, IMF Working Paper No. 68.

**Argyrou, M. G., & Chortareas, G.,** (2008), “Current Account Imbalances and Real Exchange Rates in the Euro Area”, *Review of International Economics*, Vol. 16, No. 4, pp. 747-764.

**Argyrou, M. G., & Kontonikas, A.,** (2012), “The EMU sovereign-debt crisis: Fundamentals, expectations and contagion”, *Journal of International Financial Markets, Institutions and Money*, Vol. 22, No. 4, pp. 658-677.

**Armingeon, K., & Baccaro, L.,** (2012a), “Political economy of the sovereign debt crisis: the limits of internal devaluation”, *Industrial Law Journal*, Vol. 41, No. 3, pp. 254-275.

**Armingeon, K., & Baccaro, L.,** (2012b), “The Sorrows of Young Euro: Policy Responses to the Sovereign Debt Crisis”, In Bermeo, N., & Pontusson, J., (Eds.), *Coping with Crisis: Government Reactions to the Great Recession*, Russel Sage Foundation Publications, New York, pp. 162-198.

**Aspachs-Bracons, O., & Rabanal, P.,** (2010), “The drivers of housing cycles in Spain”, *SERIEs*, Vol. 1, No. 1-2, pp. 101-130.

**Baer, W., Dias, D. A., & Duarte, J. B.,** (in Press), “The Economy of Portugal and the European Union: from High Growth Prospects to the Debt Crisis”, *The Quarterly Review of Economics and Finance*.

**Balassa, B.,** (1964), “The purchasing-power parity doctrine: a reappraisal”, *The Journal of Political Economy*, Vol. 72, No. 6, pp. 584-596.

**Bank, M., Kupfer, A., & Sendlhofer, R.,** (2011), “Performance-sensitive Government Bonds: A New Proposal for Sustainable Sovereign Debt Management”, University of Innsbruck, Department of Public Finance, Working Paper No. 24, available at: [www.researchgate.net/publication/228234102\\_Performance-Sensitive\\_Government\\_Bonds\\_A\\_New\\_Proposal\\_for\\_Sustainable\\_Sovereign\\_Debt\\_Management/file/9fcfd50b391e1dfb1f.pdf](http://www.researchgate.net/publication/228234102_Performance-Sensitive_Government_Bonds_A_New_Proposal_for_Sustainable_Sovereign_Debt_Management/file/9fcfd50b391e1dfb1f.pdf)

**Barnes, S., Lawson, J., & Radziwill, A.,** (2010), “Current account imbalances in the euro area: A comparative perspective”, OECD Economics Department, Working Paper No. 826, OECD Publishing, available at: <http://www.oecd->

[library.org/economics/current-account-imbances-in-the-euro-area\\_5km33svj7pxs-en](http://library.org/economics/current-account-imbances-in-the-euro-area_5km33svj7pxs-en)

**Becker, S.**, (2009), “EMU sovereign spread widening: reasonable market reaction or exaggeration?”, Deutsche Bank Research, available at: [http://www.dbresearch.com/PROD/DBR\\_INTERNET\\_ENPROD/PROD0000000000243619.PDF](http://www.dbresearch.com/PROD/DBR_INTERNET_ENPROD/PROD0000000000243619.PDF)

**Beetsma, R. M.**, (2001), “Does EMU need a stability pact?”, In Brunila, A., Buti, M., & Franco, D., (Eds.), *The stability and growth pact: The architecture of fiscal policy in EMU*, Palgrave Macmillan, New York, pp. 23-52.

**Belke, A., & Gros, D.**, (2007), “Instability of the Eurozone? On Monetary Policy, House Prices and Structural Reforms”, In Tilly, R., Welfens, P. J. J., & Heise, M., (Eds.), *50 Years of EU Economic Dynamics*, Springer Berlin Heidelberg, Berlin, pp. 75-108.

**Bengtsson, E.**, (2013), “Shadow banking and financial stability: European money market funds in the global financial crisis”, *Journal of International Money and Finance*, Vol. 32, pp. 579-594.

**Bennett, H., Escolano, J., Fabrizio, S., Gutiérrez, E., Ivaschenko, I., Lissovolik, B., Moreno-Badia, M., Schule, W., Tokarick, S., Xiao, Y., & Zarnic, Z.**, (2008), “Competitiveness in the Southern Euro Area: France, Greece, Italy, Portugal, and Spain”, IMF Working Paper No. 112.

**Bird, G., & Rowlands, D.**, (2010), “The episodic and unpredictable nature of IMF lending: lessons for policy”, *The World Economy*, Vol. 33, No. 10, pp. 1280-1301.

**Bishop, G.**, (2003), “The future of the Stability and Growth Pact”, *International Finance*, Vol. 6, No. 2, pp. 297-308.

**Blanchard, O.**, (2007), “Current account deficits in rich countries”, IMF Staff Papers, Vol. 54, No. 2, pp. 191-219.

**Blanchard, O., & Giavazzi, F.**, (2002), “Current account deficits in the euro area: the end of the Feldstein-Horioka puzzle?”, *Brookings papers on economic activity*, No. 2, pp. 147-209.

**Bofinger, P.**, (2012), *Zurück zur D-Mark? Deutschland braucht den Euro*, Droemer Verlag, München.

**Bohle, D.**, (2010), “The crisis of the Eurozone”, European University Institute, Robert Schuman Centre for Advanced Studies, Working Paper No. 77, available at: [http://cadmus.eui.eu/bitstream/handle/1814/14674/RSCAS\\_2010\\_77.pdf?sequence=1](http://cadmus.eui.eu/bitstream/handle/1814/14674/RSCAS_2010_77.pdf?sequence=1)

**Brunnermeier, M., Garicano, L., Lane, P., Pagano, M., Reis, R., Santos, T., Thesmar, D., van Nieuwerburgh, S., & Vayanos, D.,** (2011), “European safe bonds (ESBies)”, Euro-nomics.com, available at: [http://euro-nomics.com/wp-content/uploads/2011/10/06e-Esbies\\_document.pdf](http://euro-nomics.com/wp-content/uploads/2011/10/06e-Esbies_document.pdf)

**Buti, M., Eijffinger, S., & Franco, D.,** (2003), “Revisiting the Stability and Growth Pact: grand design or internal adjustment?”, CEPR Discussion Paper No. 3692, available at: <http://www.cepr.org/pubs/new-dps/dplist.asp?dpno=3692>

**Cabral, R.,** (2010), “The PIGS’ external debt problem”, VoxEU.org, available at: <http://www.voxeu.org/article/gips-external-debt-problem>

**Candelon, B., & Palm, F. C.,** (2010), “Banking and debt crises in Europe: The dangerous Liaisons?”, *De Economist*, Vol. 158, No. 1, pp. 81-99.

**Carballo-Cruz, F.,** (2011), “Causes and consequences of the Spanish economic crisis: Why the recovery is taken so long?.”, *Panoeconomicus*, Vol. 58, No. 3, pp. 309-328.

**Chen, M. R., Tressel, M. T., & Milesi-Ferretti, M. G. M.,** (2012), “External imbalances in the euro area”, IMF Working Paper No. 136.

**Claessens, S., Mody, A., & Vallée, S.,** (2012), “Paths to Eurobonds”, IMF Working Paper No. 172.

**Cline, W.,** (2012), “Alternative Strategies for Resolving the European Debt Crisis”, paper prepared for Resolving the European Debt Crisis, a conference hosted by the Peterson Institute for International Economics and Bruegel, Chantilly, France, September 13-14, available at: <http://www.iie.com/publications/papers/cline20110913.pdf>

**Collignon, S.,** (2012), “Europe’s Debt Crisis, Coordination Failure, and International Effects”, ADBI Working Paper No. 370, available at: <http://www.adbi.org/files/2012.07.11.wp370.europe.debt.crisis.effects.pdf>

**Constâncio, V.,** 2012, “Contagion and the European debt crisis”, Banque de France, Financial Stability Review No. 16, pp. 109-121, available at: [http://www.banque-france.fr/fileadmin/user\\_upload/banque\\_de\\_france/publications/Revue\\_de\\_la\\_stabilite\\_financiere/2012/rsf-avril-2012/FSR16-20-04.pdf#page=109](http://www.banque-france.fr/fileadmin/user_upload/banque_de_france/publications/Revue_de_la_stabilite_financiere/2012/rsf-avril-2012/FSR16-20-04.pdf#page=109)

**Coricelli, F., & Ercolani, V.,** (2002), “Cyclical and structural deficits on the road to accession: fiscal rules for an enlarged European Union”, CEPR Discussion Paper No. 3672, available at: [www.cepr.org/pubs/dps/DP3672.asp](http://www.cepr.org/pubs/dps/DP3672.asp)



- Darvas, Z.**, (2012), “The euro crisis: ten roots, but fewer solutions”, Bruegel Policy Contribution No. 17, available at: [www.bruegel.org/download/parent/755-the-euro-crisis-ten-roots-but-fewer-solutions/file/1621-the-euro-crisis-ten-roots-but-fewer-solutions/](http://www.bruegel.org/download/parent/755-the-euro-crisis-ten-roots-but-fewer-solutions/file/1621-the-euro-crisis-ten-roots-but-fewer-solutions/)
- Darvas, Z., Pisani-Ferry, J., & Sapir, A.**, (2011), “A Comprehensive Approach to the Euro-Area Debt Crisis”, Bruegel Policy Brief No. 2, available at: <http://www.bruegel.org/download/parent/491-a-comprehensive-approach-to-the-euro-area-debt-crisis/file/988-a-comprehensive-approach-to-the-euro-area-debt-crisis/>
- De Grauwe, P.**, (2013), “Design Failures in the Eurozone: Can they be fixed?”, European Commission, European Economy, Economic Paper 491, available at: [http://ec.europa.eu/economy\\_finance/publications/economic\\_paper/2013/pdf/ecp491\\_en.pdf](http://ec.europa.eu/economy_finance/publications/economic_paper/2013/pdf/ecp491_en.pdf)
- De Grauwe, P.**, (2012), *Economics of Monetary Union*, Oxford University Press, 9<sup>th</sup> ed., Oxford.
- De Grauwe, P.**, (2010a), “Crisis in the eurozone and how to deal with it”, CEPS Policy Brief No. 204, available at: [www.ceps.be/ceps/dld/2928/pdf](http://www.ceps.be/ceps/dld/2928/pdf)
- De Grauwe, P.**, (2010b), “The financial crisis and the future of the Eurozone”, Bruges European Economic Policy Briefings No. 21, pp. 1-12, available at: [www.coleurope.eu/system/files\\_force/research-paper/beep21.pdf?download=1](http://www.coleurope.eu/system/files_force/research-paper/beep21.pdf?download=1)
- De Grauwe, P.**, (2010c), “The fragility of the Eurozone’s institutions”, *Open economies review*, Vol. 21, No. 1, pp. 167-174.
- De Grauwe, P.**, (2010d), “The Greek crisis and the future of the eurozone”, *Intereconomics*, Vol. 45, No. 2, pp. 89-93.
- De Grauwe, P.**, (2009a), “Greece: The start of a systemic crisis of the Eurozone?”, VoxEU.org, available at: <http://www.voxeu.org/article/greece-start-systemic-crisis-eurozone>
- De Grauwe, P.**, (2009b), “The Euro at ten: achievements and challenges”, *Empirica*, Vol. 36, No. 1, pp. 5-20.
- De Grauwe, P.**, (2006), “Flaws in the Design of the Eurosystem?”, *International finance*, Vol. 9, No. 1, pp. 137-144.
- De Grauwe, P.**, (1993), “The political economy of monetary union in Europe”, *The World Economy*, Vol. 16, No. 6, pp. 653-661.
- De Grauwe, P., & Moesen, W.**, (2009), “Gains for all: a proposal for a common euro bond”, *Intereconomics*, Vol. 44, No. 3, pp. 132-135.

**De Santis, R.**, (2012), “The euro area sovereign debt crisis: Safe haven, credit rating agencies and the spread of the fever from Greece, Ireland and Portugal”, ECB Working Paper No. 1419.

**Delpla, J., & von Weizsäcker, J.**, (2011), “Eurobonds: The Blue Bond concept and its implications”, Bruegel Policy Contribution No. 2, available at: [www.bruegel.org/download/parent/509-eurobonds-the-blue-bond-concept-and-its-implications/file/1370-eurobonds-the-blue-bond-concept-and-its-implications/](http://www.bruegel.org/download/parent/509-eurobonds-the-blue-bond-concept-and-its-implications/file/1370-eurobonds-the-blue-bond-concept-and-its-implications/)

**Delpla, J., & von Weizsäcker, J.**, (2010), “The Blue Bond Proposal”, Bruegel Policy Brief No. 2, available at: [www.bruegel.org/download/parent/403-the-blue-bond-proposal/file/885-the-blue-bond-proposal-english/](http://www.bruegel.org/download/parent/403-the-blue-bond-proposal/file/885-the-blue-bond-proposal-english/)

**Ersoy, İ.**, (2012), “The role of Financial Openness in the Euro-Zone Crisis”, *Applied Finance*, Vol. 3, No. 5, pp. 686-701.

**Exenberger, A.**, (2004), “The Stability and Growth Pact: Experience and Lessons to be Learnt for Europe and the World”, available at: <http://homepage.uibk.ac.at/~c43207/die/papers/sgp.pdf>

**Favero, C. A., & Missale, A.**, (2012), “Sovereign spreads in the eurozone: which prospects for a Eurobond?”, *Economic Policy*, Vol. 27, No. 70, pp. 231-273.

**Favero, C. A., & Missale, A.**, (2010), "EU public debt management and Eurobonds", In *Euro Area Governance-Ideas for Crisis Management Reform*, pp. 113-135, available at: <http://www.europarl.europa.eu/committees/pt/econ/studiesdownload.html?languageDocument=EN&file=33564>

**Featherstone, K.**, (2011), “The Greek Sovereign Debt Crisis and EMU: A Failing State in a Skewed Regime”, *Journal of Common Market Studies*, Vol. 49, No. 2, pp. 193-217.

**Felipe, J., & Kumar, U.**, (2011), “Unit labor costs in the eurozone: the competitiveness debate again”, Levy Economics Institute of Bard College, Working Paper No. 651, available at: [http://www.levyinstitute.org/pubs/wp\\_651.pdf](http://www.levyinstitute.org/pubs/wp_651.pdf)

**Fernandes, C. A. L., & Mota, P. R.**, (2011), “The roots of the Eurozone sovereign debt crisis: PIGS vs non-PIGS”, *Panoeconomicus*, Vol. 58, No. 5 (Special Issue), pp. 631-649.

**Frankel, J. A., & Rose, A. K.**, (1998), “The endogeneity of the optimum currency area criteria”, *The Economic Journal*, Vol. 108, No. 449, pp. 1009-1025.

- Gambacorta, L., & Marques-Ibanez, D.,** (2011), “The bank lending channel: lessons from the crisis”, *Economic Policy*, Vol. 26, No. 66, pp. 135-182.
- Garcia Pascual, A., & Ghezzi, P.,** (2011), “The Greek crisis: Causes and consequences”, *CESifo*, Working Paper No. 3663, available at: [www.cesifo-group.de/DocDL/cesifo1\\_wp3663.pdf](http://www.cesifo-group.de/DocDL/cesifo1_wp3663.pdf)
- Gärtner, M., Griesbach, B., & Jung, F.,** (2011), “PIGS or lambs? The European sovereign debt crisis and the role of rating agencies”, *International Advances in Economic Research*, Vol. 17, No. 3, pp. 288-299.
- Geza, P., & Giurca Vasilescu, L.,** (2011), “The Optimum Currency Area. Is the Euro Zone an Optimum Currency Area?”, Munich University Library, Munich Personal RePEc Archive, MPRA Paper No. 29656, available at: [http://mpa.ub.uni-muenchen.de/29656/1/MPRA\\_paper\\_29656.pdf](http://mpa.ub.uni-muenchen.de/29656/1/MPRA_paper_29656.pdf)
- Giannone, D., Lenza, M., Pill, H., & Reichlin, L.,** (2011)., “Non-standard monetary policy measures and monetary developments”, ECB Working Paper No. 1290.
- Gianviti, F., Krueger, A. O., Pisani-Ferry, J., Sapir, A., & von Hagen, J.,** (2010), “A European mechanism for sovereign debt crisis resolution: a proposal”, Bruegel Blueprint Series, Vol. 10, available at: <http://www.bruegel.org/publications/publication-detail/publication/446-a-european-mechanism-for-sovereign-debt-crisis-resolution-a-proposal/>
- Giavazzi, F., & Pagano, M.,** (1990), “Can severe fiscal contractions be expansionary? Tales of two small european countries”, In Blanchard, O. J., & Fisher, S., (Eds.), *Macroeconomics Annual 1990*, Vol. 5, NBER, MIT Press, pp. 75-122, available at: <http://www.nber.org/chapters/c10973.pdf>
- Giavazzi, F., & Spaventa, L.,** (2011), “Why the current account may matter in a monetary union: lessons from the financial crisis in the euro area”, In Beblavý, M., Cobham, D., & Ódor, L., (Eds.), *The Euro Area and the Financial Crisis*, Cambridge University Press, Cambridge, pp.199-221.
- Gibson, H. D., Hall, S. G., & Tavlas, G. S.,** (2012), “The Greek financial crisis: growing imbalances and sovereign spreads”, *Journal of International Money and Finance*, Vol. 31, No. 3, pp. 498-516.
- Greenspan, A.,** (2010), “The Crisis”, *Brookings Papers on Economic Activity*, No. 1, pp. 201-261.
- Gros, D.,** (2011), “External versus domestic debt in the euro crisis”, CEPS Policy Brief No. 243, available at: [www.ceps.be/ceps/dld/5677/pdf](http://www.ceps.be/ceps/dld/5677/pdf)

- Gros, D., & Micossi, S.,** (2009), “A bond-issuing EU stability fund could rescue Europe”, *Europe's world: the only Europe-wide policy journal*, Vol. 11, pp. 83-87, available at: [www.europesworld.org/Portals/0/PDF\\_version/EW11\\_FINAL\\_ENG.pdf](http://www.europesworld.org/Portals/0/PDF_version/EW11_FINAL_ENG.pdf)
- Gurdgiev, C.,** (2011), “Euro's crisis: From the sovereigns to the banks and back to the sovereigns”, In Leonard, L., & Botetzagias, I., (Eds.), *Advances in Ecopolitics*, Vol. 8, pp. 109-139.
- Haidar, J.,** (2012), “Sovereign Credit Risk in the Euro Zone”, *World Economics*, Vol. 13, No. 1, pp. 123-136.
- Heipertz, M., & Verdun, A.,** (2003), “The dog that would never bite? The past and future of the Stability and Growth Pact ”, Max Planck Institute for the Studies of Societies, Working Paper No. 3, available at: <http://www.mpifg.de/pu/workpap/wp03-12/wp03-12.html>
- Hellwig, C., & Philippon, T.,** (2011), “Eurobills, not eurobonds”, VoxEU.org, available at: <http://www.voxeu.org/article/eurobills-not-euro-bonds>
- Honohan, P.,** (2010), “The Irish Banking Crisis: Regulatory and Financial Stability Policy 2003-2008”, Report to the Irish Minister for Finance by the Governor of the Central Bank, Dublin, available at: <http://www.bankinquiry.gov.ie/The%20Irish%20Banking%20Crisis%20Regulatory%20and%20Financial%20Stability%20Policy%202003-2008.pdf>
- Honohan, P.,** (2009), “Resolving Ireland’s banking crisis”, *The Economic and Social Review*, Vol. 40, No. 2, pp. 207-231.
- Hule, R., & Sutter, M.,** (2003), “Can the Stability and Growth Pact in EMU Cause Budget Deficit Cycles?”, *Empirica*, Vol. 30, No. 1, pp. 25-38.
- Hunt, J. P.,** (2009), “Credit rating agencies and the 'worldwide credit crisis': The limits of reputation, the insufficiency of reform, and a proposal for improvement”, *Columbia Business Law Review*, Vol. 2009, No. 1, pp. 109-209.
- Karras, G.,** (1996), “Is Europe an optimum currency area? Evidence on the magnitude and asymmetry of common and country-specific shocks in 20 European countries”, *Journal of Economic Integration*, Vol. 11, No. 3, pp. 366-384.
- Katsimi, M., & Moutos, T.,** (2010), “EMU and the Greek crisis: The political-economy perspective”, *European Journal of Political Economy*, Vol. 26, No. 4, pp. 568-576.

- Kelly, M.**, (2009), “The Irish Credit Bubble”, University College Dublin, Centre for Economic Research, Working Paper No. 32, available at: <https://www.ucd.ie/t4cms/WP09.32.pdf>
- Kenen, P. B.**, (1969), “The theory of optimum currency areas: an eclectic view”, In Mundell, R. A., & Swoboda, A. K., (Eds.), *Monetary Problems of the International Economy*, University of Chicago Press, Chicago, pp. 41–60.
- Kouretas, G. P., & Vlamis, P.**, (2010), “The Greek crisis: Causes and implications”, *Panaeconomicus*, Vol. 57, No. 4, pp. 391-404.
- Krugman, P.**, (2012), “Revenge of the Optimum Currency Area”, In Acemoglu, D., Parker, J., & Woodford, M., (Eds.), *Macroeconomics Annual 2012*, Vol. 27, NBER, University of Chicago Press, available at: <http://www.nber.org/chapters/c12759.pdf>
- Lane, P. R.**, (2012), “The European sovereign debt crisis”, *The Journal of Economic Perspectives*, Vol. 26, No. 3, pp. 49-67.
- Lane, P. R.**, (2011), “The Irish Crisis”, CEPR Discussion Paper No. 8287, available at: <http://www.cepr.org/pubs/new-dps/dplist.asp?dpno=8287.asp.asp>
- Larch, M.**, (2005), “Stuck in a rut? Italy’s weak export performance and unfavourable product specialization”, *ECFIN Country Focus*, Vol. 2, No. 9, available at: [http://ec.europa.eu/economy\\_finance/publications/publication11329\\_en.pdf](http://ec.europa.eu/economy_finance/publications/publication11329_en.pdf)
- Lin, J. Y., & Treichel, V.**, (2012), “The crisis in the Euro zone: did the euro contribute to the evolution of the crisis?”, World Bank, Policy Research Working Paper No. 6127, available at: <http://elibrary.worldbank.org/content/workingpaper/10.1596/1813-9450-6127>
- McGuire, P., & von Peter, G.**, (2009), “The US dollar shortage in global banking and the international policy response”, BIS Working Paper No. 291, available at: <http://www.bis.org/publ/work291.pdf>
- McKinnon, R. I.**, (1963), “Optimum currency areas”, *The American Economic Review*, Vol. 53, No. 4, pp. 717-725.
- Merler, S., & Pisani-Ferry, J.**, (2012), “Sudden stops in the euro area”, Bruegel Policy Contribution No. 6, available at: <http://www.bruegel.org/publications/publication-detail/publication/718-sudden-stops-in-the-euro-area/>
- Messori, M.**, (2011), “Can the eurozone countries still live together happily ever after?”, CEPS Policy Brief No. 39, available at: [www.ceps.eu/ceps/dld/4315/pdf](http://www.ceps.eu/ceps/dld/4315/pdf)

- Mody, A., & Sandri, D.**, (2012), “The eurozone crisis: how banks and sovereigns came to be joined at the hip”, *Economic Policy*, Vol. 27, No. 70, pp. 199-230.
- Mundell, R. A.**, (1961), “A theory of optimum currency areas”, *The American Economic Review*, Vol. 51, No. 4, pp. 657-665.
- Neal, L., & García-Iglesias, M. C.**, (in Press), “The economy of Spain in the eurozone before and after the crisis of 2008”, *The Quarterly Review of Economics and Finance*.
- Nelson, R. M., Belkin, P., & Mix, D. E.**, (2010), “Greece's Debt Crisis: Overview, Policy Responses, and Implications”, Library of Congress, Congressional Research Service, available at: [http://assets.opencrs.com/rpts/R41167\\_20100407.pdf](http://assets.opencrs.com/rpts/R41167_20100407.pdf)
- Ortega, E., & Peñalosa, J.**, (2012), “The Spanish economic crisis: key factors and growth challenges in the euro area”, Banco de Espana, Occasional Paper No. 1201, available at: <http://www.bde.es/f/webbde/SES/Secciones/Publicaciones/PublicacionesSerias/DocumentosOcasiones/12/Fich/do1201e.pdf>
- Peon, D., & Rey, F.**, (2013), “Playing with Fire: Internal Devaluation for the GIPSI Countries”, available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2200176](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2200176)
- Pisani-Ferry, J.**, (2012), “The euro crisis and the new impossible trinity”, Bruegel Policy Contribution No. 1, available at: [www.bruegel.org/download/parent/674-the-euro-crisis-and-the-new-impossible-trinity/file/1540-the-euro-crisis-and-the-new-impossible-trinity/](http://www.bruegel.org/download/parent/674-the-euro-crisis-and-the-new-impossible-trinity/file/1540-the-euro-crisis-and-the-new-impossible-trinity/)
- Pisani-Ferry, J., & Sapir, A.**, (2010), “Banking crisis management in the EU: an early assessment”, *Economic Policy*, Vol. 25, No. 62, pp. 341-373.
- Presbitero, A. F., & Zazzaro, A.**, (2012), “IMF lending in times of crisis: Political influences and crisis prevention”, *World Development*, Vol. 40, No. 10, pp. 1944-1969.
- Priewe, J.**, (2012), “European imbalances and the crisis of the European Monetary Union”, In Herr, H., Niechoj, T., Thomasberger, C., Truger, A., & van Treeck, T., (Eds.), *From Crisis to Growth? The Challenge of Debt and Imbalances*, Metropolis-Verlag, Marburg.
- Ramirez, M. D., & Menhem, R.**, (2012), “The Greek Sovereign Debt Crisis: A Conceptual and Empirical Analysis”, Trinity College Department of Economics, Hartford, Working Paper No. 3, available at: <http://internet2.trincoll.edu/repec/WorkingPapers2012/WP12-03.pdf>

- Reinhart, C. M., & Rogoff, K.,** (2009), *This time is different: Eight centuries of financial folly*, Princeton University Press, Princeton.
- Reinhart, C. M., & Rogoff, K.S.,** (2010), “Growth in a Time of Debt”, *American Economic Review*, Vol. 100, No. 2, pp. 573-78.
- Richter, F., & Wahl, P.,** (2011), “The Role of the European Central Bank in the Financial Crash and the Crisis of the Euro-Zone”, WEED-World Economy, Ecology & Development, Report based on a WEED Expert Meeting, available at: [http://www2.weed-online.org/uploads/ecb\\_report\\_final.pdf](http://www2.weed-online.org/uploads/ecb_report_final.pdf)
- Rosenberg, C. B., Halikias, I., House, B. E., Keller, C., Nystedt, J., Pitt, A., & Setser, B.,** (2005), “Debt-Related Vulnerabilities and Financial Crises: An Application of the Balance Sheet Approach to Emerging Market Countries”, IMF Occasional Paper No. 240.
- Rother, P., & Valenta, V.,** (2010), “Euro area fiscal policies: exit from the crisis mode”, In van Riet, A., (Eds.), *Euro area fiscal policies and the crisis*, ECB Occasional Paper No. 109.
- Salvatore, D.,** (2002), “The euro: Expectations and performance”, *Eastern Economic Journal*, Vol. 28, No. 1, pp. 121-136.
- Samuelson, P. A.,** (1964), “Theoretical notes on trade problems”, *The Review of Economics and Statistics*, Vol. 46, No. 2, pp. 145-154.
- Sauerrnheimer, K.,** (2012), “Greece: Bail-out packages, current account and foreign debt”, *CESifo Forum*, Vol. 12, No. 4, pp. 37-43, available at: [http://www.cesifo-group.de/portal/page/portal/DocBase\\_Content/ZS/ZS-CESifo\\_Forum/zs-for-2011/zs-for-2011-4/forum4-11-focus7.pdf](http://www.cesifo-group.de/portal/page/portal/DocBase_Content/ZS/ZS-CESifo_Forum/zs-for-2011/zs-for-2011-4/forum4-11-focus7.pdf)
- Scharpf, F.,** (2011), “Monetary union, fiscal crisis and the preemption of democracy”, Max Planck Institute for the Studies of Societies, Discussion Paper No. 11, available at: [http://www.mpifg.de/pu/mpifg\\_dp/dp11-11.pdf](http://www.mpifg.de/pu/mpifg_dp/dp11-11.pdf)
- Schmid, P. A.,** (2012), “The crisis of the EMU”, Munich University Library, Munich Personal RePEc Archive, MPRA Paper No. 40390, available at: [http://mpra.ub.uni-muenchen.de/40390/1/MPRA\\_paper\\_40390.pdf](http://mpra.ub.uni-muenchen.de/40390/1/MPRA_paper_40390.pdf)
- Schuknecht, L., Von Hagen, J., & Wolswijk, G.,** (2010), “Government Bond Risk Premiums in the EU Revisited: The Impact of the Financial Crisis”, ECB Working Paper No. 1152.

- Schwab, K.**, (2012), “The Re-emergence of Europe”, World Economic Forum, available at: [http://www3.weforum.org/docs/WEF\\_KSC\\_Re-emergenceEurope\\_2012.pdf](http://www3.weforum.org/docs/WEF_KSC_Re-emergenceEurope_2012.pdf)
- Seitz, F., & Jost, T.**, (2012), “The role of the IMF in the European debt crisis”, HAW im Dialog-Weidener Diskussionspapiere No. 32, available at: <https://www.econstor.eu/dspace/bitstream/10419/56452/1/689266685.pdf>
- Sgherri, S., & Zoli, E.**, (2009), “Euro area sovereign risk during the crisis”, IMF Working Paper No. 222.
- Shin, H. S.**, (2012), “Global banking glut and loan risk premium”, *IMF Economic Review*, Vol. 60, No. 2, pp. 155-192, available at: <http://www.palgrave-journals.com/imfer/journal/v60/n2/abs/imfer20126a.html>
- Sinn, H. W.**, (2013), “Austerity, growth and inflation: Remarks on the Eurozone's unresolved competitiveness problem”, *CESifo*, Working Paper No. 4086, available at: [www.cesifo-group.de/DocDL/cesifo1\\_wp4086.pdf](http://www.cesifo-group.de/DocDL/cesifo1_wp4086.pdf)
- Sinn, H. W.**, (2010), “Rescuing Europe”, *CESifo Forum*, Vol. 11 (Special Issue), pp. 1-22, available at: [www.cesifo-group.de/DocDL/Forum-Sonderheft-Aug-2010\\_0.pdf](http://www.cesifo-group.de/DocDL/Forum-Sonderheft-Aug-2010_0.pdf)
- Sinn, H. W., & Valentinyi, A.**, (2013), “European imbalances”, VoxEU.org, available at: <http://www.voxeu.org/article/european-imbalances>
- Solana, J.**, (2013), “A New Business Model for Cyprus”, available at: <http://www.project-syndicate.org/commentary/prosperity-after-the-cypriot-crisis-by-javier-solana>.
- Stephanou, C.**, (2011), “The Banking System in Cyprus: Time to Rethink the Business Model?”, *Cyprus Economic Policy Review*, Vol. 5, No. 2, pp. 123-130.
- Tanzi, V.**, (2004), “The Stability and Growth Pact: Its Role and Future”, *Cato Journal*, Vol. 24, No. 1-2, pp. 57-69.
- Tavlas, G. S.**, (2004), “Benefits and costs of entering the Eurozone”, *Cato Journal*, Vol. 24, No. 1-2, pp. 89-106.
- Tichy, G.**, (2011), “Did Rating Agencies Boost the Financial Crisis?”, *Intereconomics*, Vol. 46, No. 55, pp. 232-262.
- Utzig, S.**, (2010), “The financial crisis and the regulation of credit rating agencies: A European banking perspective”, ADBI Working Paper No. 188, available at: <http://www.adbi.org/files/2010.01.26.wp188.credit.rating.agencies.european.banking.pdf>



- Uxó, J., Paúl, J., & Febrero, E.,** (2011), “Current account imbalances in the Monetary Union and the Great Recession: causes and policies”, *Panoeconomicus*, Vol. 58, No. 5 (Special Issue), pp. 571-592.
- van Treeck, T.,** (2011), “Why the Stability and Growth Pact does not work”, In Pons-Vignon, N., (Ed.), *There is an alternative*, International Labour Office, Geneva, pp. 37-40, available at: [http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms\\_155448.pdf](http://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/---publ/documents/publication/wcms_155448.pdf)
- Varoufakis, Y.,** (2011), *The Global Minotaur: America, the true origins of the financial crisis and the future of the world economy*, Zed Books Limited, London.
- Whelan, K.,** (2011), “Ireland's Sovereign Debt Crisis”, University College Dublin, Centre for Economic Research, Working Paper No. 9, available at: [https://cstar.ie/t4cms/WP11\\_09.pdf](https://cstar.ie/t4cms/WP11_09.pdf)
- White, L.J.,** (2010), “Markets: The credit rating agencies”, *The Journal of Economic Perspectives*, Vol. 24, No. 2, pp. 211-226.
- Wihlborg, C., Willett, T., & Zhang, N.,** (2010), “The Euro Crisis: It Isn't Just Fiscal and it Doesn't Just Involve Greece”, Claremont McKenna College, Robert Day School of Economics and Finance, Working Paper No. 2011-03, available at: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1776133##](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1776133##)
- Willett, T. D., Permpoon, O., & Wihlborg, C.,** (2010), “Endogenous OCA analysis and the early euro experience”, *The World Economy*, Vol. 33, No. 7, pp. 851-872.
- Wyplosz, C.,** (2006), “European Monetary Union: the dark sides of a major success”, *Economic Policy*, Vol. 21, No. 46, pp. 207-261.
- Yang, W., & Lei, L.,** (2012), “A Comprehensive Approach to the European Sovereign Debt Crisis”, *Advances in Asian Social Science*, Vol. 2, No. 4, pp. 545-549.
- Yüceol, H. M.,** (2006), “Why European Union is not an Optimal Currency Area: The Limits of Integration”, *Ege Academic Review*, Vol. 6, No. 2, pp. 59-72.