



**LISBOA
SCHOOL OF
ECONOMICS &
MANAGEMENT**

MASTER

**INTERNATIONAL ECONOMICS AND EUROPEAN
STUDIES**

MASTERS FINAL WORK

DISSERTATION

DEBT MUTUALISATION IN THE EUROZONE

**MARCELO RODRIGO DE SEABRA GEADA
DE FIGUEIREDO ALCÂNTARA**

OCTOBER 2015



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Acknowledgements

Great appreciation and deepest gratitude for the help and support are extended to the following Professors of the Lisbon School of Economics and Management, University of Lisbon, which have contributed to make this Master's Dissertation possible.

Professor António Afonso, coordinator of the PhD in Economics, for remarkable economic expertise and valuable advices.

Professor João Ferreira do Amaral, for outstanding enthusiasm in the discussion about the future of the Eurozone and the need for reform of the monetary system.

Associate Professor Joaquim Ramos Silva, coordinator of the Masters in International Economics and European Studies, for the passion with which his classes were taught.

Professor Maria Paula Fontoura, for providing me with the desire of studying International Economics in my Masters.

Assistant Professor Manuel Zorro Mendes, coordinator of the undergraduate degree in Economics, for his motivation during my studies in the degree of Economics.

To all of those who shared the academic life with me, especially my colleague

João Guilherme Ribeiro, for his unique vision of Economics, friendliness and fight spirit shared with me.

Abstract

The objective of this Dissertation is to study debt mutualisation in the Eurozone as a means of dealing with the high levels of indebtedness that many Member States face. For the resolution of the Great Recession, the EU institutions created financial assistance mechanisms, which were merely a short-term answer to the sovereign debt crisis. However, the resolution of such problem requires a long-term solution that allows for the proper management of public debt. Bearing in mind proposals presented by other authors, this Dissertation provides an alternative way in which governments can deal with fiscal discipline without compromising economic growth.

Keywords: Economic and monetary union; Eurozone crisis; Government bond yields; Public debt; new debt mutualisation proposal.

Resumo

O objectivo desta Dissertação prende-se com o estudo da mutualização da dívida na Zona Euro para resolução dos elevados níveis de endividamento, com os quais muitos Estados Membros se confrontam. Para a resolução da Grande Recessão, as instituições europeias criaram mecanismos de assistência financeira, os quais constituíram meramente uma resposta de curto prazo para a crise das dívidas soberanas. No entanto, a resolução de tal problema requer uma solução de longo prazo, que permita a gestão eficiente da dívida pública. Tendo em conta propostas apresentadas por outros autores, esta Dissertação propõe uma alternativa que permite aos governos lidarem com a disciplina orçamental, sem comprometer o crescimento económico.

Palavras-chave: União económica e monetária; Crise da Zona Euro; Taxas de juro da dívida pública; Dívida pública; nova proposta de mutualização da dívida.

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List of Acronyms

AMECO	Annual Macro-economic Database
CBPP	Covered Bonds Purchase Programme
ECB	European Central Bank
ECU	European Currency Unit
EDA	European Debt Agency
EFSF	European Financial Stability Facility
EFSM	European Financial Stability Mechanism
EMS	European Monetary System
EMU	Economic and Monetary Union
ESB(ies)	European Safe Bonds
ESM	European Stability Mechanism
ERF	European Redemption Fund
ERP	European Redemption Pact
EU	European Union
FED	Federal Reserve System
GCEE	German Council of Economic Experts
GDP	Gross Domestic Product
GIIPS	Greece, Ireland, Italy, Portugal, Spain
ISC	Independent Stability Council
OCA	Optimum Currency Areas
OMT	Outright Monetary Transactions
SGP	Stability and Growth Pact
SMP	Securities Market Programme
TFEU	Treaty on the Functioning of the European Union
US	United States (of America)
VAT	Value-added tax

1. Introduction

The financial crisis of 2008 put in evidence structural failures of the Eurozone economies, such as their high level of public debt and the close relation between sovereigns and the financial system. Indeed, in the years after the creation of the Eurozone, many Member States borrowed large amounts of money, benefiting from the low government bond yields the single currency allowed them to have. Government bonds were sold mainly to national banks, which led to a high level of exposure to sovereign debt. The solvency of banks forced governments to intervene during the financial crisis, worsening their fiscal situation and creating doubts about their own solvency, which then raised concerns about the solvency of domestic banks, the prime buyers of national public debt.

This crisis revealed the lack of financial solidarity within the Eurozone, leading to rhetoric in Northern Europe, of fiscal indiscipline in Southern Europe as the cause of the sovereign debt crisis. Indeed, Northern European countries imposed fiscal consolidation as the way to solve the public debt problem, an idea that was accepted by the European institutions.

Several financial mechanisms were proposed by the European institutions to solve the sovereign debt crisis in the Eurozone such as the EFSM and the EFSF, with a joint lending capacity of €500 billion, as well as non-conventional monetary policies by the ECB. Despite contributing to lower the government bond yields, these mechanisms have not solved the structural problem of high public debt values.

One of the possible solutions to this problem is debt mutualisation, which allows for a sharing of the responsibilities in the Eurozone, providing governments with mechanisms to enhance economic growth and fiscal consolidation.

This Dissertation proposes the study of debt mutualisation in the Eurozone and is structured in the following manner: chapter 2 presents a view on the construction and objectives of the Economic and Monetary Union; chapter 3 describes several debt mutualisation proposals presented by other authors; chapter 4 describes the evolution of government bond yields and public debt in the Eurozone; chapter 5 presents a new proposal of debt mutualisation and chapter 6 the concluding remarks.

2. The Economic and Monetary Union

2.1. Introduction

The decision to create the Economic and Monetary Union (EMU) was taken at the European Council Meeting of December 1991, in Maastricht, three years after this Council mandated the European Commission's President Jacques Delors to set a committee to study its feasibility. In the following year, the approved Maastricht Treaty included the convergence criteria to be met by each country that would participate in the EMU. Among others, these criteria stated that the public debt should not exceed 60% of GDP and the budget deficit should not be higher than 3% of GDP (Nello, 2012).

On 31 December 1998, the conversion rates of the currencies of participating countries were fixed against the ECU¹, which was replaced by the Euro on the following day and on 1 January 2002, Euro coins and banknotes entered into circulation. At this time, twelve countries belonged to the Eurozone – the EU15 Member States², with the exception of the United Kingdom, Denmark and Sweden. Slovenia would adopt the Euro in 2007,

¹ ECU – European Currency Unit

² EU15 Member States – Belgium, Germany, France, Italy, Luxembourg, Netherlands, Denmark, Ireland, United Kingdom, Greece, Portugal, Spain, Austria, Finland and Sweden.

Cyprus and Malta in 2008, Slovakia in 2009, Estonia in 2011, Latvia in 2014 and Lithuania in 2015, totalling nineteen countries in the European single currency area.

2.2. Economic Integration

To evaluate the possibility of a group of countries forming an economic and monetary union, the theory of Optimum Currency Areas (OCA)³ is used. This theory advocates that the costs and benefits of joining a fixed exchange rate area depend on the level of integration between a country and its potential partners (Krugman, Obstfeld and Melitz, 2012).

These benefits are related to more efficient capital markets, better management of inflation, better investment analysis and gains in terms of trade with countries outside the exchange rate area. Krugman, Obstfeld and Melitz stated that, *“a high degree of economic integration between a country and a fixed exchange rate area magnifies the monetary efficiency gains the country reaps when it fixes its exchange rate against the area’s currencies”*. Hence, the higher the degree of economic integration between the joining country and the fixed exchange rate area, the higher the monetary efficiency gain for the joining country. On the other hand, the costs of joining a fixed exchange rate area are related to the loss of the monetary policy, reduction of the macroeconomic policies to the fiscal policy, possible deepening of inequality and loss of seigniorage benefits. The same authors concluded that, *“a high degree of economic integration between a country and the fixed exchange rate area that it joins reduces the resulting economic stability loss due to output market disturbances”*. Therefore, the higher the degree of economic integration,

³ The OCA theory was introduced by Robert Mundell in 1961 (Mundell, 1961).

the lower the loss of economic stability resulting from the entrance in the single currency area.

Thus, a country with the intention of joining a fixed exchange rate area must carefully assess its economic integration with that area, not only measuring it in terms of trade flows, but also evaluating the ease of mobility of production factors and the importance of the monetary policy. Therefore, a country should join a fixed exchange rate area if the monetary efficiency gains are bigger than the economic stability losses (Krugman, Obstfeld and Melitz, 2012).

2.3. Is the European Union an Optimum Currency Area?

To some authors, the European Union is not an optimum currency area, as the decision of establishing an Economic and Monetary Union in the EU was essentially political. As mentioned above, one way to assess the possibility of establishing an economic union is through the evaluation of the economic integration of product and factor markets. Indeed, in the beginning of 1999, most EU countries showed a significant extent of economic integration in the product markets, with a 10-20% export share between Member States, allowing room for gains in monetary efficiency with the formation of the EMU. Nevertheless, these values were smaller than the ones for US individual states. As to what concerns the labour market, there are many language and culture barriers in the EU that do not allow labour movement to reach the level of the US. Regarding the capital markets, it can be said that they are fully integrated in the EU. Krugman, Obstfeld and Melitz suggest that, in order to become an OCA, the European Union needs more integration in the product and labour markets, a fiscal union to promote the transfer of economic

resources from regions thriving economically to regions with economic crises and a banking union (Krugman, Obstfeld and Melitz, 2012).

By means of using the theory of Optimum Currency Areas, Paul De Grauwe agrees the Economic and Monetary Union is not an OCA (De Grauwe, 2011). The author argues that the EMU is an incomplete monetary union, since it needs to be inbedded in a political union that requires a fiscal union. According to this author, one of the problems of the Eurozone countries is the debt issuance in a foreign currency which they do not control. This way their central bank cannot operate as a lender of last resort and financial markets can force a country into default by driving it into a bad equilibrium. If investors fear that a default is possible, they start selling their bonds, lowering the price and raising the yields. Government expenditure with debt increases, making a default more likely (De Grauwe and Ji, 2014). Without the possibility of devaluating their currencies, countries are forced to an internal devaluation, which is long-lasting and causes social problems as unemployment.

One of the flaws of the Eurozone design was related to the differences in competitiveness of its Member States (Valiante, 2011). In fact, with the easy access to credit in the early 2000s, some EU countries such as Spain, Ireland and Greece experienced strong booms in the housing sector, while countries like Belgium, Netherlands, Luxemburg, Germany and France, experienced low growth. This led to a loss in the competitiveness of periphery countries, by means of an increase in wages and prices and to the improvement of the competitiveness of “core” countries (De Grauwe, 2013). With the loss of competitiveness, periphery countries had to be subject to internal devaluations, with price and wage reductions, leading to recessions, to the worsening of government budgets and to a bad equilibrium.

2.4. Political Objectives of the EMU

Since the proposal of an Economic and Monetary Union in the European Union, economists have always expressed their concerns about its feasibility. As mentioned above, the Eurozone at the time of its creation was not an OCA. The reasons for implementing such a monetary union, were not so much economical, but more political. They resulted from the desire by the two main political players in the EU (at the time EEC⁴), France and Germany, although for different reasons. Whilst it was France's desire to end the hegemony of the Deutsche Mark in the European Monetary System (EMS), Germany's chancellor, Helmut Kohl, regarded it as a way of ensuring peace between France and Germany in the future (De Grauwe, 2013).

Despite Helmut Kohl's reasons, the German people did not accept the establishment of a Monetary Union that included the Southern European countries, which were seen as fiscally undisciplined. In order to raise the acceptance of the EMU by the German public opinion, the Maastricht criteria were established.

On the other hand, we have to be mindful of the fact that the design of the Eurozone was made by members of the Delors Committee (1989), which were mostly central bankers, influenced by monetarism. Monetarism argues that central banks have the exclusive function of maintaining price stability and their intervention in order to stimulate economic activity only destabilizes the economy (De Grauwe, 2013). This way the Delors Committee led political leaders to believe that there were more benefits than costs, regarding the formation of the EMU.

⁴ EEC – European Economic Community

2.5. Euro Crisis

The international financial crisis of the late-2000s came to be known as the Great Recession. It started, in 2007, with the subprime crisis of the US and was preceded by a long period of credit growth, leveraging and development of bubbles in the real estate sector. As De Grauwe and Moesen put it in 2009, a period of “flight to risk”, in which rating agencies wrongly gave triple A ratings to not so worthy assets (De Grauwe and Moesen, 2009).

With the collapse of Lehman Brothers, in 2008, there was a financial meltdown in stock markets and a crisis of confidence between financial institutions, making investors seek to protect their investments in assets they considered the safest, traditionally sovereign bonds (European Commission, 2009). In the Eurozone, this meant buying less bonds from the periphery countries and more bonds from countries like Germany and France, widening the gap between yields, in a “flight to safety” movement (De Grauwe and Moesen, 2009); (European Commission, 2009); (Gros and Micossi, 2009). At the same time, to avoid a debt deflation dynamics, governments were forced to take over excessive private debts (De Grauwe & Yi, 2009).

One of the problems that led to the Eurozone sovereign debt crisis was the lack of coordinated response. The ECB raised the Refinancing Rate in late 2008, soon after the FED started to cut the interest rates in the US, due to the fact that the ECB’s mandate is to control the levels of inflation at around but not higher than 2% (TFEU, 2008). Appendix 1 shows the comparison of interest rates from the FED and the ECB from 2007 to 2014.

The first response to the crisis by European governments was to raise government expenditure and stimulate economic activity, by means of the European Recovery Plan,

which included an economic stimulus of € 200 billion, equivalent to 1.5% of the EU's GDP and an investment plan on energy efficiency and infrastructures (European Commission, 2008).

According to Paul De Grauwe, the initial response of the European Governments was the correct one. Yet, the diagnosis that was made by the Eurozone leaders, i.e., the German Government, the ECB and the European Commission, according to the author, led to the belief that government profligacy was to blame. Furthermore, political leaders in the Northern European countries blamed the lack of fiscal discipline of the Southern European countries for the Eurozone crisis. In fact, what caused the European sovereign debt crisis was not the excessive public debt, but excessive private debt (De Grauwe, 2011). This way, periphery governments were forced to implement austerity measures, worsening their fiscal situation (Council of the European Union, 2009); (European Council, 2009); (European Council, 2010).

On the other hand, European Banks had invested heavily in the American Subprime Market. Therefore, to avoid a financial collapse, many European governments had to bailout some of the banks, spending €1.6 trillion between 2008 and 2011, equivalent to 13% of the EU's annual GDP (European Commission, 2014). However, most of the money for these bailouts had to be borrowed, so markets started to pay more attention to government deficits and public debts. Therefore, a banking crisis spread to the sovereign debts. Due to the fact that in the Eurozone there is no lender of last resort, the sovereign debt crisis hit Eurozone countries harder than the rest of the EU. Moreover, for some years, the ECB had in fact encouraged banks to buy government bonds, increasing the link between the sovereign and the domestic banks (De Grauwe, 2013).

Banks and sovereign hedge funds typically buy large amounts of sovereign bonds, due to their low risk and volatility and their high liquidity. This type of asset is highly valued as a collateral at the ECB (European Central Bank, 2013) and accepted by Basel III regulations (Basel Committee on Banking Supervision, 2011). However, the increased link between the sovereign and the domestic banks means that if the fiscal position of a sovereign deteriorates substantially, the quality of bonds as a collateral for banks is reduced, therefore risking their access to financing (European Commission, 2011). Furthermore, banks were over exposed to home country national debt bonds, which fed speculation about their solvency. In case of financial difficulties on a national bank, a sovereign would have to bail it out. This raises the yield on the bonds of the sovereign, making it more likely that it will have to bail out its banks, worsening its debt yields (The Euro-nomics Group, 2011).

For example, the strong exposure Irish banks had to the US subprime market, led to a bailout of some of them and to the collapse of others and, therefore, to the issuance of large volumes of debt in order to save Ireland's financial sector⁵. Appendix 2 shows the evolution of government surplus/deficit in the Eurozone, between 2002 and 2014, emphasising very high budget deficits in some countries, among which -32.5% in Ireland on 2010.

2.6. Crisis Resolution in the Eurozone

Due to the financial problems some EU countries were facing, in May 2010, the European Union and the Eurozone countries established the European Financial Stability

⁵ The Allied Irish Banks Group was nationalized on January 2009. Together with Bank of Ireland and EBS (Education Building Society), the bailout of these three banks, reached €31 billion euros, between 2008 and 2012 (Honohan, 2011).

Mechanism (EFSM) and the European Financial Stability Facility (EFSF), two temporary funds, the first with a lending capacity of €60bn and the latter €440bn. The EFSM provides financial assistance to EU Member States, using the budget of the EU as a guarantee, while the EFSF serves only the Eurozone countries and is backed up by guarantees of these countries according to their share in the capital of the ECB. The EFSM provided Ireland with €22.5bn and Portugal with €24.3bn. The financial assistance to Ireland and Portugal via the EFSM was concluded in 2014. The EFSF provided financial assistance during the bailout of Greece, Ireland and Portugal. It lent to Ireland €17.7bn and to Portugal €26bn and was part of the second bailout to Greece providing the country with €130.9bn⁶ (European Commission, 2015a); (European Financial Stability Facility, 2015).

The European Stability Mechanism (ESM) replaced the EFSF, in October 2012, as the sole lender of the EU to the Eurozone countries, focusing on regulation and effective economic surveillance, preventing future crisis. The ESM raises funds by issuing money market instruments, as well as medium and long-term debt with maturities up to 30 years. Meanwhile, the EFSF will continue to operate until it receives the repayments from beneficiary countries and makes the payments to the EFSF bondholders (European Stability Mechanism, 2015).

During a press conference in July 2012, Mario Draghi, the ECB President said, “*Within our mandate, the ECB is ready to do whatever it takes to preserve the euro. And believe me, it will be enough*” (Draghi, 2012). This prompted yields on bonds to decrease in all maturities for all Eurozone countries. Non-conventional monetary policies by the ECB, such as the Securities Markets Programme (SMP), the Outright Monetary Transactions

⁶ The second bailout to Greece expired on 30 June 2015.

(OMT) programme, the Covered Bonds Purchase Programme (CBPP) and the Quantitative Easing (QE) have helped to further reduce the yields on bonds (European Parliament, 2014). Nevertheless, some Eurozone countries still face high debt/GDP ratios as shown in Appendix 3.

All these funds and monetary policies constituted the immediate response to the sovereign debt crisis by the European Institutions and EU Member States. However, in order to establish a long-term equilibrium regarding these debts there is the need for a new instrument to stabilize the drawback that high public debts have on GDP growth in several EU countries. The instrument proposed in this paper for the management of Eurozone sovereign debts is debt mutualisation.

3. Debt Mutualisation

3.1. Introduction

The aim of this chapter is to give an overview of some debt mutualisation proposals for the Eurozone. Among the various proposals presented since the beginning of the euro sovereign debt crisis, five have been chosen due to their detailed description and feasibility.

These proposals include “The Blue Bond Proposal” by Jacques Delpla and Jakob von Weizsäcker of the Bruegel think tank, “Partial sovereign bond insurance by the Eurozone: A more efficient alternative to the blue (Euro-)bonds” by Hans-Joachim Dübel, as a critic to Bruegel’s proposal, “European Safe Bonds (ESBies)” by the Euro-nomics group, “The European Redemption Pact” by the German Council of Economic Experts and “The Green Paper on the feasibility of introducing Stability Bonds” by the European Commission.

3.2 The Blue Bond Proposal

In May 2010, Jacques Delpla and Jakob von Weizsäcker of the Bruegel think tank presented “The Blue Bond Proposal”, suggesting that Eurozone countries *should pool up to 60% of GDP⁷ of their national debt under joint and several liabilities as senior sovereign debt*, and that any remaining debt *should be issued as national and junior debt*. By means of the issuance of a common euro bond, the proposal foresees, for the senior (Blue Bonds), the creation of a big, liquid market with a low yield, most likely lower than the average of the yields of Eurozone countries, and a higher yield for the junior (Red Bonds), which would include a risk premium. In case of default, the red tranche, being junior, would be affected first, and the blue tranche, being senior, would only be affected in case the default is not fully absorbed by the junior tranche. This implies a difference in the risk, leading to a difference in the interest rates paid for each tranche, further reinforced by market liquidity, since there would be an increase in demand for Blue Bonds and a decrease in demand for Red Bonds (Delpla and von Weizsäcker, 2010) (Delpla and von Weizsäcker, 2011).

According to the authors, the Blue and Red Bonds scheme would reduce overall debt via a lower borrowing cost on the blue tranche and higher marginal costs of borrowing on the red tranche, which would contribute to fiscal discipline. Briefly, it is the combination of the liquidity effect on the blue tranche together with the fiscal discipline effect on the red tranche that guarantee an overall reduction on the cost of borrowing.

Based on the predictions of the European Commission for 2016, an update of this proposal is shown in Figure 1, which is based on the values from Appendix 4. Luxembourg, Slovakia and the Baltic countries would not have the need to issue Red Bonds, while

⁷ This threshold is motivated by the Maastricht criteria.

some countries as Greece, Italy and Portugal would have a Red Bond issuance superior to that for Blue Bonds. With this proposal, there would be a possible creation of a Blue Bond market of around €6.3 trillion (Appendix 4).

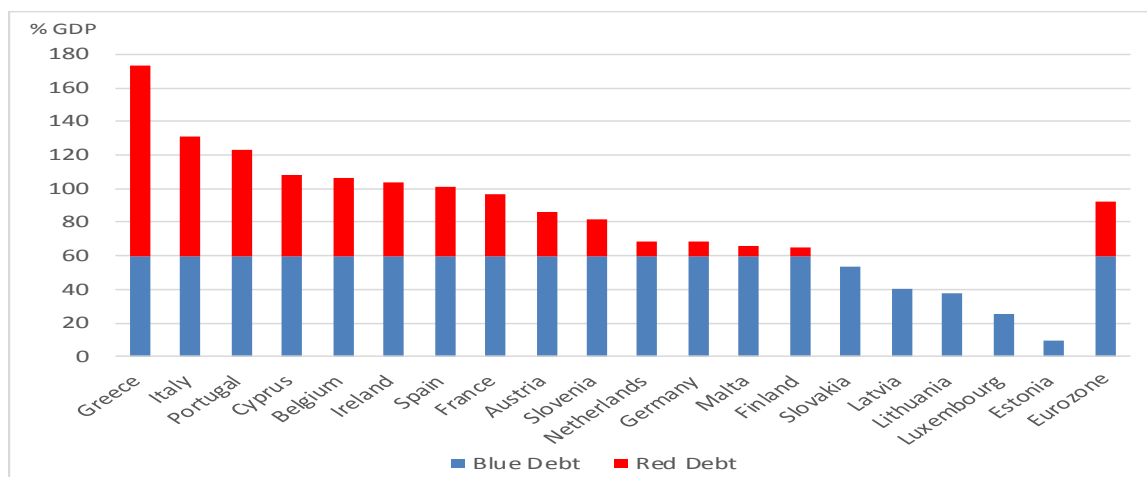


Figure 1. 2016 forecast for the Blue Bond proposal.

Source: Author's elaboration on AMECO data

Nevertheless, only countries with credible fiscal policies would be allowed to borrow up to 60% of GDP in Blue Bonds, while other countries, with weaker public accounts would only be allowed a lower percentage. In case a country participating in the Blue Bond scheme did not pursue credible fiscal policies, it would be gradually evicted from the scheme, via the gradual lowering of the Blue Bond allocation. Additionally, an Independent Stability Council (ISC) should be created, which would propose the Blue Bond annual allocation, subject to a voting procedure by Member States' parliaments.

3.3. Partial Sovereign Bond Insurance

In August 2011, Hans-Joachim Dübél (Dübél, 2011) proposed partial sovereign bond insurance, based on the proposal by Jacques Delpla and Jakob von Weizsäcker. Dübél criticizes the 60% of GDP or any other moderate threshold for the Blue Bonds,

considering this impossible to reach in a financial crisis, due to the rising yields of the Red Bonds, related to a “flight to safety” movement to Blue Bonds. Countries in a stressful situation would be pushed to the ESM. Therefore, investors, knowing this, would consider all bonds issued as Blue Bonds, fully protected by the ESM, with the respective consequences in terms of moral hazard.

As an alternative to this “full insurance” by the ESM, Dübel proposes a partial insurance of bonds with no volume limit, both on the principal and on the interest, moderating marginal debt issuance costs in a crisis, while preventing moral hazard problems and promoting responsible fiscal policies in normal times. This proposal suggests a partial insurance of both the principal and the interest, more specifically, via a “dormant” senior-junior structure, which means that the junior bond is created only when the bond insurance is called. For this, Dübel proposes a 60% insurance on both the interest and the principal, while, for example, French banking industry proposes 50%, with 30c/€ paid in cash to lenders and 20c/€ paid via highly rated zero coupon bonds⁸.

The partial bond insurance avoids the 60% ratio limit (Appendix 5) and has the advantage of reducing marginal borrowing costs during crisis scenarios, by means of treating the entire yield curve as equal, so that all the bonds issued would include a junior and a senior part.

The Blue Bond Proposal described above would create a kinked total debt market value curve, as shown in Appendix 5. Below the 60% threshold, market value of debt would always be in accordance to financial markets⁹, not charging any risk premium. However, above the 60% threshold, market value of debt would fall, due to higher yields, which

⁸ Fédération Bancaire Française (2011), cited by Dübel, 2011.

⁹ The ESM coupon level

would then include a risk premium. Under the partial insurance proposal, all debt would include a risk premium, in accordance to a sovereign's debt risk, promoting fiscal discipline at all debt levels, whilst the Blue Bond proposal, under the 60% threshold, would treat high-risk sovereign debt as low-risk.

In a crisis, the marginal costs of issuing more debt would be much lower than with the Red Bonds and, during non-crisis periods, these costs would be sufficiently high in order to maintain fiscal discipline. Dübel's proposal leads to lower costs of borrowing in a financial crisis with both the principal and the interest insured by the ESM. The sold bonds would include a junior part and a senior part and, therefore, in order to acquire the safe asset, an investor would also have to buy the non-safe one.

Partial insurance requires the payment of risk premium at any level of debt, while in the Blue Bond Proposal there is no risk premium below 60% of GDP. In a crisis, junior bonds can be restructured or a haircut can be possible, something to be determined by the ESM and the borrower, which would be subject to fiscal policies imposed by the lender.

3.4. European Safe Bonds

In September 2011, the Euro-nomics group¹⁰, an informal group of European economists, concerned with Europe's financial problems and the lack of safe assets, decided to create the so-called European Safe Bonds (ESB), referred to as ESBies. These bonds would be issued by a European Debt Agency (EDA), benefit from the ECB's anti-inflation

¹⁰ The Euro-nomics group is a consortium of European economists affiliated in US and EU universities: Markus Brunnermaier (Princeton University), Luis Garicano (London School of Economics), Philip R. Lane (Trinity College Dublin), Marco Pagano (University of Naples Federico II), Ricardo Reis (Columbia University), Taro Santos (Columbia Business School, Columbia University), David Thesmar (Hautes Etudes Commerciales, Paris), Stijn van Nieuwerburgh (New York University Stern School of Business) and Dimitri Vayanos (London School of Economics).

commitment and would not require treaty changes nor more fiscal integration (The Euro-nomics Group, 2011). It is the authors' opinion that Europe's sovereign debt problem is the consequence of a world problem: the lack of safe assets. They refer that Europe, despite the size of its economy, the development of its financial markets and the fact that it homes one of the world's reserve currencies, does not supply a safe asset that can rival the US Treasury Bonds.

In the absence of a European safe asset, bank regulators, policy makers and investors have treated bonds as riskless assets. This led to an exposure of banks to sovereign risk, which then increased the countries' probability of bailing out its banks, leading to higher sovereign bond yields and to a "flight to safety" between bonds of different countries.

Based on this proposal, the EDA would buy 60% of Eurozone's GDP in sovereign bonds¹¹, according to the relative size of each Member State, measured by the average GDP of the previous five years. To finance this buying of bonds, the EDA would issue two securities: the first security, the ESBies, would have senior status, on both the principal and the interest; the second security would have a junior status, being hit first in the case of default. Figure 2 shows each country's weight on the EDA's sovereign bonds portfolio for 2015, using updated data between 2010 and 2014, presented in Appendix 6. Germany, France, Italy and Spain would have the higher country weight percentage of the EDA portfolio.

¹¹ €6.07 trillion, using Eurozone GDP data between 2010 and 2014 (Appendix 6).

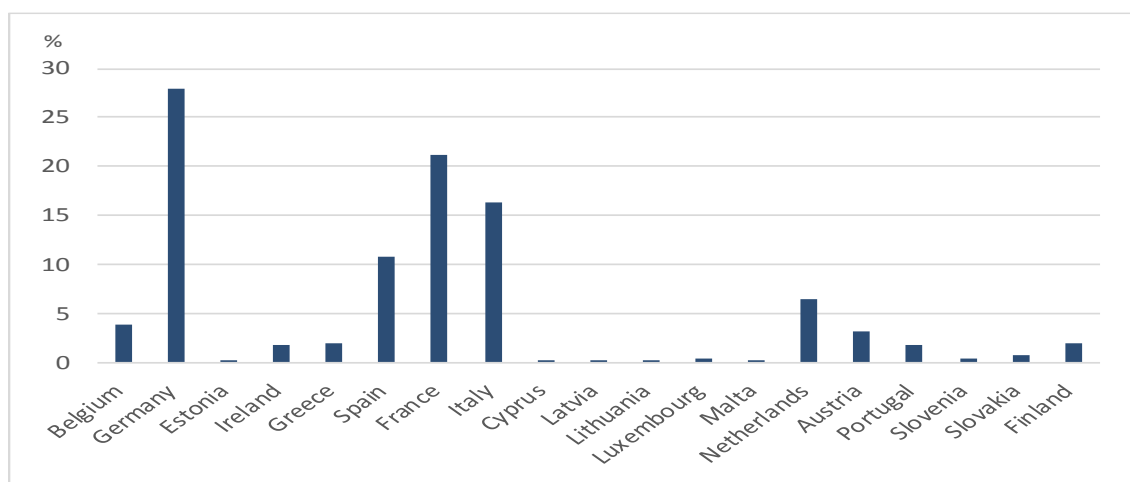


Figure 2. 2015 EDA portfolio based on the ESBies proposal.

Source: Author's elaboration on AMECO data

ESBies would be made even safer by means of initial payments made by Member States. The ECB, European banks, pension funds and sovereign wealth funds could be the natural clients of the senior tranche, whilst the junior tranche would be sold to investors such as hedge funds.

ESBies' success, though, would be dependent on ECB regulation to grant them strict preferential treatment, as its main form of collateral in repo and discounting operations, and on other banking regulators to give them zero risk weight. The "flight to safety" would be made from the junior tranche to the senior tranche, rather than from a country to another. Furthermore, there would be no need for guarantees from taxpayers or changes to the treaties.

3.5. European Redemption Pact

In their Annual Report 2011/2012, issued on 9 November 2011, the German Council of Economic Experts (GCEE) presented the European Redemption Pact (ERP) (German Council of Economic Experts, 2011). Contrarily to what is proposed by Delpla and von

Weizsäcker, the GCEE proposes to transfer all debt above 60% of GDP to a common fund (ERF¹²), with joint and several liabilities. The proposed redemption pact would take between 20 to 25 years to be redeemed, following the Stability and Growth Pact's rule of annual reductions of debt above 60% of GDP at the rate of 1/20, after which the ERF would cease its existence.

The pact provides Eurozone countries with the possibility of a roll-in of debt up to five years, in order to finance current funding needs, thus promoting strong fiscal discipline. Each country would be able to participate in the ERF up to the amount in excess of 60% of GDP observed at its adhesion to the ERP. Moreover, one condition to be met by participating countries requires that debt should not rise again above 60% of GDP, guaranteed by means of a debt brake on national Constitutions.

In order to secure its reasonable functioning, five rules need to be established:

- 1) each country should set a constitutional limit for the structural budget deficit at 0,5% of GDP¹³, after a transitional phase; this cap could be monitored by a European Agency such as the European Court of Auditors;
- 2) common strategy of public expenditure to ensure the ERF is only used up to 25 years¹⁴, with the inclusion of a clause to terminate the joint and several liability of new debt, should a country not meet the proposed objectives;
- 3) establishing a mark-up on a national tax to ensure the debt service to the Redemption Fund;
- 4) the use of reserves on the national central banks as collateral to guarantee 20% of each country's debt in the fund;

¹² ERF – European Redemption Fund

¹³ As stipulated by the Treaty on Stability, Coordination and Governance in the Economic and Monetary Union.

¹⁴ With the possibility of exclusion from the fund should a country not achieve its consolidation objectives.

- 5) burden sharing scheme of any amount due by a single country under the joint and several liability, among all remaining solvent countries, due to a default by a country or group of countries.

Using predicted data for 2016 from AMECO (Appendix 7), the size of the fund would be of €3.3 trillion, with Italy accounting for the biggest share of the fund (35.8%), whilst other important contributors would be France (25%), Spain (14%) and Germany (7.73%) (Figure 3). Greece is not included because it is under a new Adjustment Programme, as of October 2015.

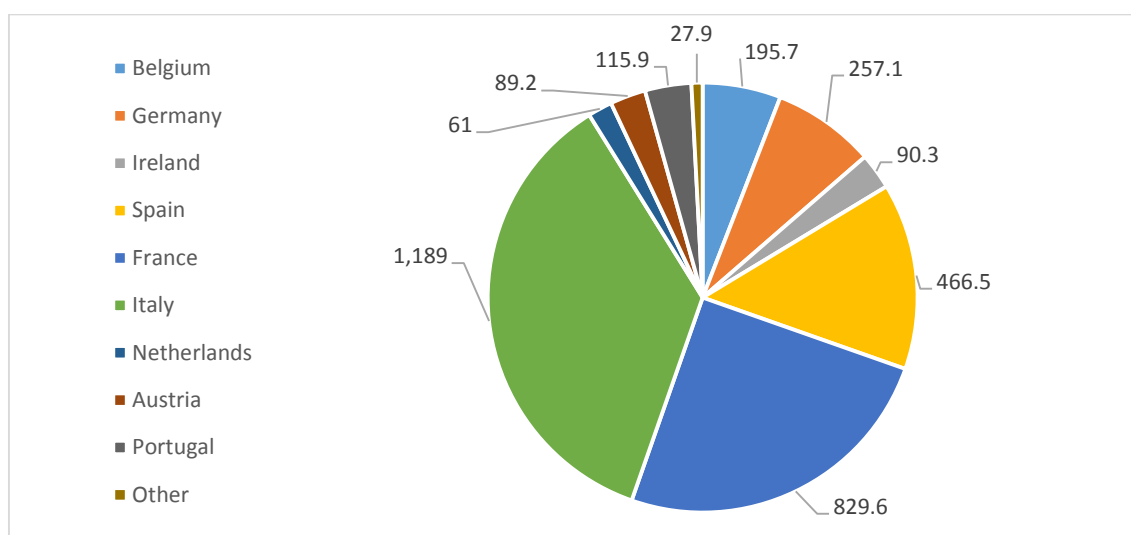


Figure 3. 2016 predicted Redemption Fund shares and values (in billions of euros) for Eurozone countries with a debt/GDP ratio higher than 60% that are not subject to any Assistance Programme.

Source: Author's elaboration on AMECO data

One of the key aspects of this pact is the structure of the interest rate and redemption payments, which should be defined accordingly to the economic cycle. The authors propose that payments could gradually be adjusted in the first five years, to the level of financing needed in the medium term, so that a country could accumulate the necessary primary surplus. Countries with high yields could benefit from the pact due to the interest rate advantage they will have on the debt placed in the fund. In the case of low yield

countries, there might be an additional burden, which would, nonetheless, be limited by the liquidity of the created market.

3.6. Green Paper on the feasibility of introducing Stability Bonds

On 23 November 2011, the European Commission presented a “Green Paper on the feasibility of introducing Stability Bonds¹⁵”, which included three proposals of debt mutualisation the Commission refers to as approaches (European Commission, 2011). Although before there had been other documents and papers proposing Eurobonds¹⁶, the debate intensified with the Eurozone sovereign debt crisis and the presentation of the Green Paper. Stability Bonds would work as both a short-term and long-term solution. The Commission acknowledged that the simple announcement of their introduction would reduce yields in the short-term. In the long-term, Stability Bonds would assure that no Member State would be out of the market, helping to reduce market volatility and eliminating the need for rescue measures to countries temporarily excluded from market financing.

The first proposal was a “Full substitution of Stability Bond issuance for national issuance, with joint and several guarantees”, via a common issuance of bonds expected to have a high credit rating, benefiting the countries with fiscal difficulties. The most efficient way of issuing these Stability Bonds would be through an agency, which would manage the needs of financing for each Member State, as well as gather interest and principal payments from each.

¹⁵ Whilst in the public discussion the term “Eurobond” is used, the Commission, in line with its ex-President José Manuel Barroso, refers to “Stability Bonds”.

¹⁶ Common issuance discussed by the Giovannini Group (Giovannini Group, 2001) and by the European Primary Dealers Association (European Primary Dealers Association, 2008).

With this proposal, the liquidity problems of some Member States would be solved due to the creation of a big market for Stability Bonds that would rival the US Treasury Bond market. To avoid moral hazard problems, there would be the need to deepen the integration at the economic, financial and political level, as means to promote budgetary discipline, competitiveness and the catching up of the poorer economies with the richer.

The phasing-in of the Stability Bonds could occur in two ways. In the first, Stability Bonds, rapidly creating a big liquid market for these bonds, would replace outstanding government bonds. In the second, there would be full or only partly issuance of new debt in Stability Bonds, with outstanding bonds remaining national until maturity. This way, the creation of the big market could take longer and the benefits could be smaller in the beginning, but it would give the market time to adapt to the new bonds, minimizing risks of market disruption.

The second proposal of the Green Paper is a “Partial substitution of national issuance with Stability Bond issuance with joint and several guarantees”, which is in fact a “blue-red approach”¹⁷. The threshold can be fixed at a more prudent level than 60% of GDP. This proposal is less ambitious than the previous one, delivering less financial benefits to highly indebted countries.

The third proposal of the Green Paper is somewhat very different from the previous two and is probably the most politically acceptable. It is designated by “Partial substitution of national issuance with Stability Bond issuance with several but not joint guarantees”. The main difference from the second proposal lies in the fact that the Stability Bonds commonly issued would be a responsibility of each Member State, reducing moral hazard

¹⁷ This proposal is in fact the Blue Proposal by Delpla and von Weizsäcker in which the Blue Bonds are referred to as Stability Bonds.

problems and would not require any treaty changes. Once more, a 60% of GDP debt limit would be used for the issuance of Stability Bonds. The common issuance would be beneficial in terms of reduced liquidity premium, enabling countries without access to the market to be able to issue debt. This would be a short-term solution, which would not solve the euro sovereign debt crisis, but would be the most feasible and possibly the only, out of the three, politically acceptable.

In order to increase the acceptance of the Stability Bonds, Member States could provide seniority to Stability Bonds, with collateral such as currency reserves and gold, and mark-up a specific tax to service the Stability Bonds' debt¹⁸. According to this proposal and under normal circumstances, the total cost of debt for a country would remain constant or fall, while its marginal cost of debt issuance would rise, helping to promote fiscal discipline.

Out of the three proposals, the first is the most ambitious one given the fact that it would be the best to fight the credit problems of several countries. Nevertheless, it would carry the biggest risk of moral hazard. The third proposal, contrarily to the previous two, would not require any treaty changes, but it would demand secondary legislation to establish the seniority status of the Stability Bonds.

3.7. Other proposals

Since 2009, there have been several other proposals concerning euro-denominated bonds, the so-called Eurobonds, to deal with distortions between the economies of the Eurozone, especially concerning the differences between the Southern European Countries and

¹⁸ As proposed in the European Redemption Pact.

Ireland, and the Northern European Countries. Besides the proposals described above, others types of proposals have also been presented (Claessens, Mody and Vallée, 2012). One of the first proposals was presented by Paul de Grauwe and Wim Moesen (De Grauwe and Moesen, 2009), who concluded that it was possible to create a common euro market for sovereign bonds, attractive not only to Germany but also to Greece, the *prototype high-risk country* (IMF, 2012).

Gros and Micossi (Gros and Micossi, 2009) urged the creation of a common European re-capitalization fund, as the EFSF, financed by EU, with bonds practically riskless and backed jointly by all Member States.

In the midst of the euro sovereign debt crisis, Hellwig and Philippon (Hellwig and Philippon, 2011) proposed the issuance of Eurobills, up to 10% of Eurozone GDP, as debt with maturities of less than a year, to help crisis management, preventing liquidity crises and improving financial stability.

On January 2012, the ELEC¹⁹ proposed a four-year “Euro T-Bill Fund”, which uses debt instruments with maturities up to 2 years, after Member States sign the Treaty on Stability, Coordination and Governance (European League for Economic Cooperation, 2012). The Fund would borrow at the lowest rate available with a “joint and several” guarantee. This short-term fund would be beneficial to restore competitiveness and sustainability of public finances.

More recently, John Muellbauer (Muellbauer, 2013) proposed, on October 2013, the use of “Euro-insurance-bonds”, which would have a joint guarantee. The debt issuance would be made via a European Debt Agency that would demand the payment of a risk premium to each country, in order to insure against default by any country. New debt issued in the

¹⁹ ELEC – European League for Economic Cooperation

Eurozone, via Eurobonds, would have a single price for investors, but different prices for each country.

All these proposals were left out either because they proposed mere short-term financing solutions, they just presented an idea not extensively developed, or due to the fact that there was already a very similar proposal described in this paper.

4. Government Bond Yields and Public Debt

4.1. Introduction

Recently the debate about debt mutualisation has faded, due to the low yields for most of the Eurozone countries, which signals a better financial situation concerning their public finances. However, this is a false assumption. The Euro crisis is far from being solved, the fundamental problems regarding the construction of the EMU have not been tackled and several financial and political events could trigger another crisis.

For example, in the past few years, Greece has been considered a candidate for leaving the Eurozone. On 19 August 2015, the Greek government agreed to a third bailout programme (Council of the European Union, 2015), therefore being subject to a new financial aid package by the ESM and having agreed to several economic reforms including broadening the tax base for the VAT, spending cuts and reforms of the pension system (European Council, 2015). The European Commission and the ECB estimate that Greece will need financial assistance in the amount of €82 billion until the end of 2018²⁰ (European Commission, 2015b).

²⁰ The ESM's Forward Commitment Capacity is, as of 19 August 2015, €369.31 billion (European Stability Mechanism, 2015).

In this chapter data on the evolution of government bond yields and public debt levels will be presented. Not always high debt to GDP ratios correspond to high yields on government debt. In fact, some countries in the Eurozone, despite their high public debt levels, avoid market scrutiny on the sustainability of their public finances.

4.2. 10-Year Government Bond Yields

At the time of the signing of the Maastricht Treaty in 1992, there were fundamental differences in monetary policies among the twelve countries that would constitute the EMU on 1 January 2002. The evolution of government bond yields on 10-year maturities, between January 1993 and July 2015, for the twelve Member States that belonged to the EMU when the Euro entered in circulation is shown in Figure 4.

By 1999 all government bond yields on the 10-year bonds were moving together, including Greece from 2001 onwards, when the country entered the EMU. The spreads were at a maximum 1 percentage point, down from a difference of more than 6 percentage points in 1993²¹. This convergence is explained by the adoption of the Maastricht criteria and by the consequent reduction of inflation rates and fiscal imbalances (Swanson, 2008) (Ehrmann et al., 2008).

Sovereign debt yield spreads between 2001 and 2008 did not take into account the growing economic imbalances in the Eurozone, as financial markets considered the risk of default to be the same for all Member States. During this period, the yields for Eurozone countries were almost the same, with the exception of Luxembourg that managed to have lower yields than the rest of the Eurozone countries.

²¹ If we include Greece, the yields difference in January 1993 was of more than 17 percentage points.

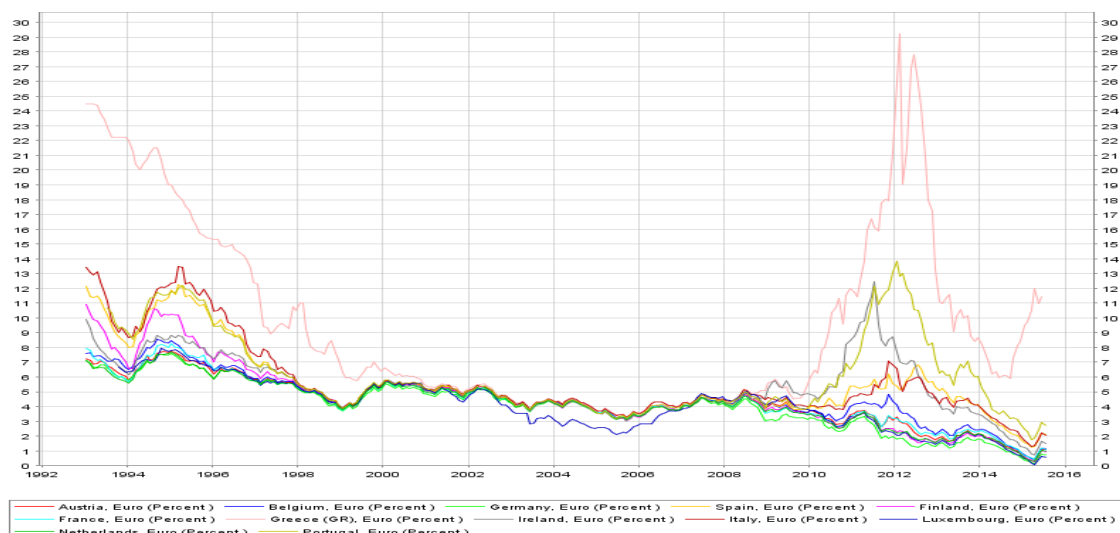


Figure 4. 10-year government bond yields for the initial group of twelve Member States in the Eurozone, from January 1993 to July 2015.

Source: ECB Statistical Data Warehouse 04/09/2015

The observed yield convergence was not due to a catching up or fiscal discipline, but rather to poor knowledge about this newly created market, which led investors to believe that the risk inherent to each country in the Eurozone was the same.

The detailed evolution of the government bond yields for Greece, Ireland, Italy, Portugal and Spain (GIIPS) and their contrast with the government bond yields for Germany and France, for 10-year maturity bonds, from January 2008 to July 2015, is shown in Figure 5. France and Germany are included in the graph, as since 2008, the bonds issued by these countries have been seen as a safe asset.

Greece, Portugal and Ireland were subject to financial assistance, Spain was subject to financial assistance only to its banking sector and Italy has had a very close attention by financial markets due to the size of its public debt. Both Spain and Italy are the two Eurozone big economies that faced market scrutiny regarding their public debt sustainability. In early 2015, the government bond yields on 10-year maturity bonds reached all-time lows, except for Greece, which was under an Adjustment Programme.

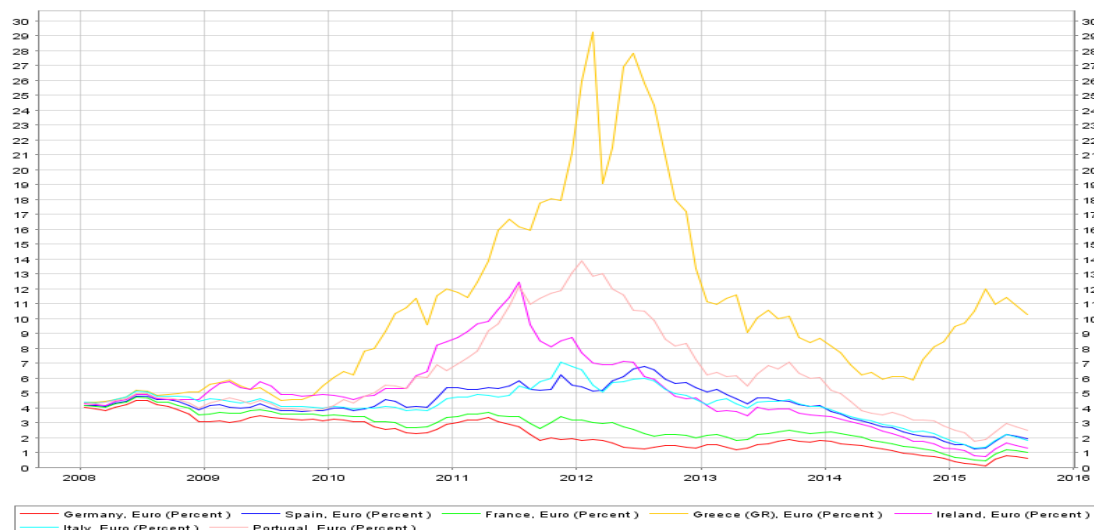


Figure 5. 10-year government bond yields for a selected group of Member States in the Eurozone, from January 2008 to July 2015

Source: ECB Statistical Data Warehouse 04/09/2015

The following events²² help to explain the evolution of the bond yields in Figure 5:

- Lehman Brothers bankruptcy -15/09/2008
- Greece reveals its 2008 budget was the double of previously disclosed - 05/11/2009
- Greece officially requests financial support - 23/04/2010
- Ireland officially requests financial support - 21/11/2010
- Portugal officially request financial support - 06/04/2011
- Boost of EFSF lending capacity - 23/06/2011
- Statement by the Troika on Ireland - 14/07/2011
- Eurogroup agrees on second bailout to Greece - 21/02/2012
- Greece holds an election but fails to form a Government - 06/05/2012
- Spain officially requests financial support to banks - 27/06/2012
- Eurogroup grants assistance to Spain's banks and ECB suspends Greek bonds as collateral - 20/07/2012
- Mario Draghi says: "... the ECB will do whatever it takes to save the Euro" - 26/07/2012
- Greek Parliament fails to elect new president - 23/12/2014
- The ECB announces the Quantitative Easing programme in the Eurozone – 22/01/2015

However, the events mentioned above do not fully explain each of the swings. The data on the figure is monthly, which means that the values for the graph are from month-end. This hides short-term volatility, which would be better depicted in a candle graph for which there is no accessible data (European Central Bank, 2015).

²² ECB Euro Crisis Timeline.

4.3 Public Debt

In the end of 2014, the levels of public debt in the Eurozone were approximately €9.5 trillion, compared to just €6.1 trillion in 2007, as shown in Appendix 8. Germany, France, Italy and Spain are currently the four countries with the biggest public debt in the Eurozone, all of them with a debt of more than €1 trillion. Despite this, France and Germany did not have any sovereign debt crisis, due to their high levels of economic activity and competitiveness.

These countries were seen as a safe-harbour for investors' money and the least likely countries to default in their bonds, which explains the low levels of their 10-year yields. With the Quantitative Easing programme of the ECB, the German yields dropped so much that, on 25 February 2015, German 5-year bonds had a negative yield for the first time (Financial Times, 2015).

Belgium, which is the only country with a public debt/GDP ratio above 100%²³ that was not subject to market attention, did not face a sovereign debt crisis, despite having spent more than €128 billion, between 2008 and 2011, in the bailout of its financial sector (European Commission, 2012). This is due to a combination of several factors that allowed this country to avoid an economic crisis and surging bond yields. Since 2008, Belgium has had small productivity growth, rising unit labour costs amidst a political crisis. Nevertheless, its financial system did not face any bank flights, the unemployment did not rise significantly, there was not any housing bubble due to excessive building and Belgium maintained its net foreign asset position (Financial Times, 2015).

²³ See Appendix 3.

Estonia, Latvia, Lithuania, Luxembourg, Slovakia and Finland had, at end of 2014, a public debt to GDP ratio of less than 60%, with Estonia reaching a mere 10.6% of GDP²⁴ (Appendix 3). Figure 6 compares the values for the debt to GDP ratio of the nineteen Eurozone countries, for 2007 and 2014. The biggest increases in percentage points were registered in Ireland (24%-110%), Greece (103%-177%), Spain (36%-98%), Cyprus (54%-108%), Portugal (68%-130%) and Slovenia (23%-81%). Although their percentage points rises were lower, countries such as Latvia (8%-40%), Lithuania (16%-41%), Luxembourg (7%- 24%) saw their debt/GDP ratios more than double.

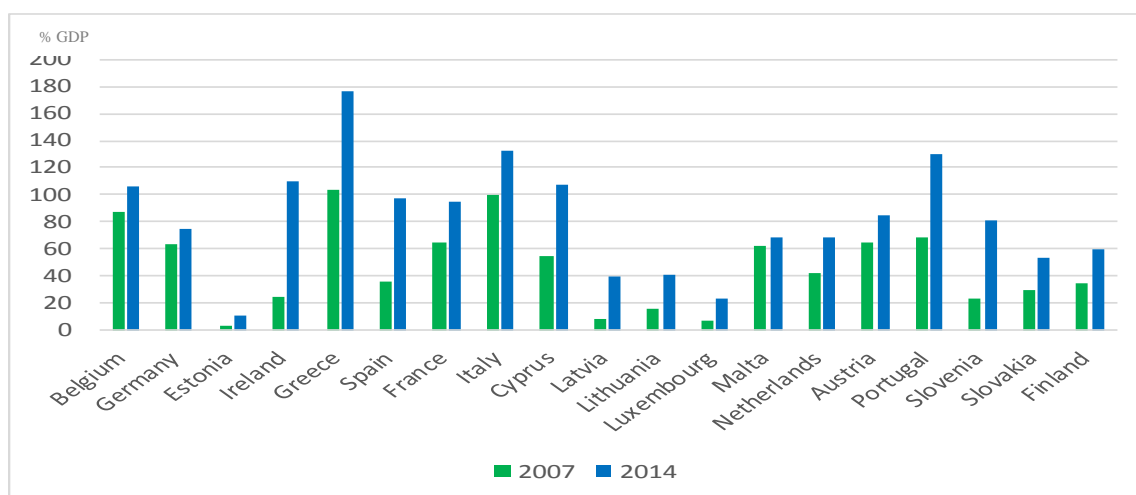


Figure 6. Debt to GDP ratio in the Eurozone for 2007 and 2014.

Source: Author's elaboration on AMECO data

A combination of banking sector bailouts and lower tax revenues help to explain the surge in the public debt to GDP ratio in Ireland, Greece, Spain, Cyprus and Portugal. The economic crisis created a spiral of lower economic activity, more unemployment, bigger social spending, less tax revenue, lower demand and, consequently, less economic activity.

²⁴ Finland is expected to have a ratio rise to 64.82% by the end of 2016 (Appendix 3), since it is currently in an economic crisis (The Guardian, 2015).

5. A New Proposal

5.1. Introduction

Considering all proposals presented in Chapter 2, the blue and red bond concept seems the best one to apply to Eurozone Member States, due to the current level of sovereign debt. The new proposal described below presents an alternative and would have the Blue Bond Proposal as a basis. However, some adjustments need to be done to this proposal. Although stated in Maastricht Treaty, the value of 60% GDP for blue bond limit lacks economic proof and even, the 90% level, described by Reinhart and Rogoff, has been proved not to be entirely a good one when applied by itself (Reinhart and Rogoff, 2010). Nevertheless, the bigger the Blue Bond market, the smaller the demand for Red Bonds, increasing the cost with this kind of debt, implying serious debt issuance problems in countries with a high debt/GDP ratio. Due to this kind of problems, the new proposal would include several tranches. A comparison between the suggested proposal and the described proposals will also be made further below.

5.2. New Proposal – A Blue, Yellow and Red Bonds Proposal

This paper presents a new debt mutualisation proposal, which would consist of three debt tranches. A Blue Bond, with senior status, which would include debt up to 60% of GDP and would enjoy joint and several liability; a Yellow Bond, with a second tier status, which would include debt between 60-90% of GDP and would be issued jointly between all Eurozone Member States; and a Red Bond, which would be composed by all the remaining debt above 90% of GDP and would have national issuance.

Although this proposal is based on the Blue Bond proposal by Delpla and von Weizsäcker, it minimizes one of its major problems - the low liquidity of the red bonds

and therefore high debt issuance costs. By introducing a mid-tier threshold, it reduces the impact of the rising red bond yields in the total cost of debt servicing. This new level, with joint issuance, assures that debt at this level will be traded in the market no matter the issuing country.

Concerning current Eurozone Member States' government yields, with this new proposal there would be a fall in yields, especially in the debt up to 60% of GDP, which is estimated to be a €6.4 trillion market in 2016 (Appendix 9). The debt between 60-90% of GDP, €2.2 trillion, would also have a low yield, but the relative fall would be smaller. Finally, the debt above 90% of GDP would have a higher cost at a higher level than proposed in the Maastricht treaty, in a market of €1.3 trillion and would contribute to an even more strict fiscal discipline.

Figure 7 and Appendix 9 show, for 2016, the allocation of bonds for the nineteen Eurozone Member States, according to this scheme. For that year, it is estimated that eight countries – Belgium, Ireland, Greece, Spain, France, Italy, Cyprus and Portugal – will have a debt/GDP ratio above 90%, meaning they will be subject to the issuance on national bonds, while five countries will have a debt/GDP ratio between 60-90% - Germany, Malta, The Netherlands, Slovenia and Finland.

In summary, the blue tranche would have a senior status, the yellow tranche a mid-senior status and the red tranche a junior status. Although not with joint liability, the rationale behind the Yellow Bonds with a joint issuance is the attraction of liquidity, which would be very beneficial, especially for the countries with high yields. With the added middle tier of Bonds, the costs of issuing debt beyond the Blue Bond level will be lower for the following 30% of GDP in debt. Furthermore, the Blue Bond yield would likely be lower than the weighted average of the national bond yields as mentioned in the Blue Bond

Proposal. The Red tranche would affect all debt above 90% of GDP. It would have a high cost of issuance, considering the liquidity caught by the other two thresholds, meaning that this proposal should discourage a country to have a debt to GDP ratio over 90%.

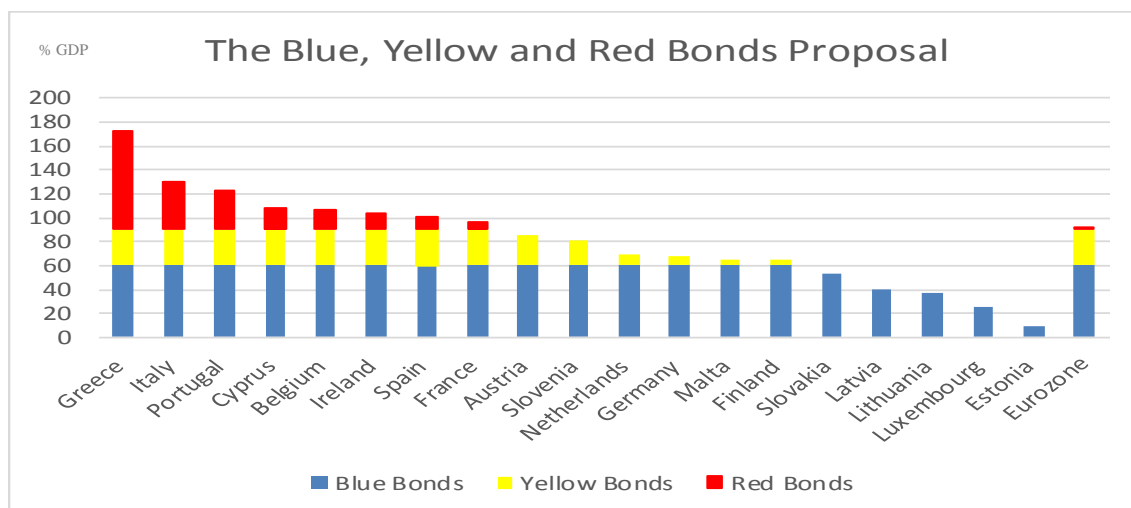


Figure 7. The Blue, Yellow and Red Bonds Proposal concerning the 19 Eurozone Member States using predicted data for 2016.

Source: Author's elaboration based on data from AMECO

This proposal gives highly indebted countries a bigger leeway to manage their public debt, given that most Eurozone countries have a debt to GDP ratio higher than 60%.

5.3. Comparison of Proposals

The Blue, Yellow and Red Bonds proposal has specific characteristics that make it the best one to be implemented when compared to the proposals described in Chapter 3.

In comparison to the Blue Bond Proposal, the alternative presented in this paper adds a middle threshold, so that the costs with red debt are lower due to the higher liquidity of the debt between 60% and 90% of GDP. This means a lower over debt servicing, but not without a threshold, that holds back any fiscal policy loosening.

Dübel's proposal creates a financial instrument that includes both insured and non-insured debt. Nevertheless, one of the biggest problems of this proposal is the fact that it

increases the debt costs of countries with debt/GDP ratios that are unsustainable in the long-term. Under the new proposal, the cost of financial debt up to 60% will be lower and instead of a single yield, there would be three different yields.

As for the ESBies, their major flaw is the low fiscal discipline they impose. In case of a default, the impact on the yields would be absorbed by the fact that the bonds were sold by the EDA to investors, making the rise in yield lower, giving a bigger encouragement to moral hazard by countries. With the yellow tranche proposed in this paper, the fiscal policy coordination would allow for a more strict debt issuing that would not encourage any moral hazard actions.

The proposal regarding the European Redemption Pact is unrealistic. It would require countries to change their national Constitutions and demand a reduction of debt in a very fast pace, not compatible with the economic growth needed for the payment of that debt.

The first approach on the Green Paper by the European Commission can be considered politically impossible. It would require Eurozone Member States to be responsible for the debt issued by any Member States in case of a default. Northern European countries would not accept a proposal that would be particularly beneficial for the Southern European countries. Besides the necessary treaty changes, it would carry significant risks of moral hazard, particularly concerning the GIIPS countries.

The third approach presented in the Green Paper of the European Commission is politically acceptable, but is short of any answer to solving the sovereign debt crisis in the Eurozone. The main challenge in the sovereign debt crisis is the reduction of the costs of issuing debt and this proposal would not make the costs of debt any better. Countries would be liable for their respective share of the issued Stability Bonds, reaping low

benefits from the common issuance. It would almost have no effect in lowering the costs of issuing debt.

Therefore, the Blue, Yellow and Red Bonds proposal presented in this paper, given the three tranches and the three different yields, leads to a better management of public debt with room for economic growth, without compromising fiscal discipline.

6. Conclusions

The project of the single currency in the European Union was initiated for the wrong reasons, these being more political than economical. This led to a system that resembles the one of the Bundesbank, much more adapted to highly competitive, low inflation economies of Northern Europe, than to the less competitive and higher inflation ones of Southern Europe. Therefore, the Euro instead of allowing for a catching up of the economies in the Eurozone, actually proved to work in the opposite direction. The lack of monetary policies in some countries, led to impoverishment as being the only path to competitiveness.

Several financial mechanisms were proposed by the European institutions to solve the sovereign debt crisis in the Eurozone such as the EFSM and the EFSF, the Securities Market Programme, Outright Monetary Transactions and Quantitative Easing. Despite contributing to lower the government bond yields, these mechanisms have not solved the structural problem of high public debt values.

Debt mutualisation emerges as a solution, which allows concomitantly financial reforms and economic growth. Its main objective is to create a high liquidity market, which can rival the one for US Treasury Bills. Whatever the proposal for a common bond issuance, it would create an asset with high credit and low yields. The fiscal situation of many

Eurozone Member States implies more economical solidarity and a sharing of responsibilities, as well as a deeper coordination of economic policies.

The new proposal presented in this paper – The Blue, Yellow and Red Bonds proposal - while considering other proposals described before, makes fiscal discipline more compatible with economic growth, by introducing the possibility of three tranches, with three different yields. The blue tranche would have a senior status, the yellow tranche a mid-senior status and the red tranche a junior status. The blue tranche would cover debt up to 60% of GDP and the yellow tranche would include debt from 60% up to 90% of GDP. Although not with joint liability, the rationale behind the Yellow Bonds with a joint issuance is the attraction of liquidity, which would be very beneficial, especially for the countries with high yields. The red tranche would affect all debt above 90% of GDP. It would have a high cost of issuance, considering the liquidity caught by the other two thresholds, meaning that this proposal should discourage a country to have a debt to GDP ratio over 90%. By giving more room to public management and lowering yields on the margin, this proposal eases austerity measures and allows governments to boost economic activity.

The euro sovereign debt crisis created a problem in the management of public debt, imposing austerity measures, which allow little or no economic growth and creating devastating social problems throughout some Eurozone Member States. Given that most Eurozone countries have a debt to GDP ratio higher than 60%, the new presented proposal gives highly indebted countries a bigger leeway to manage their public debt.

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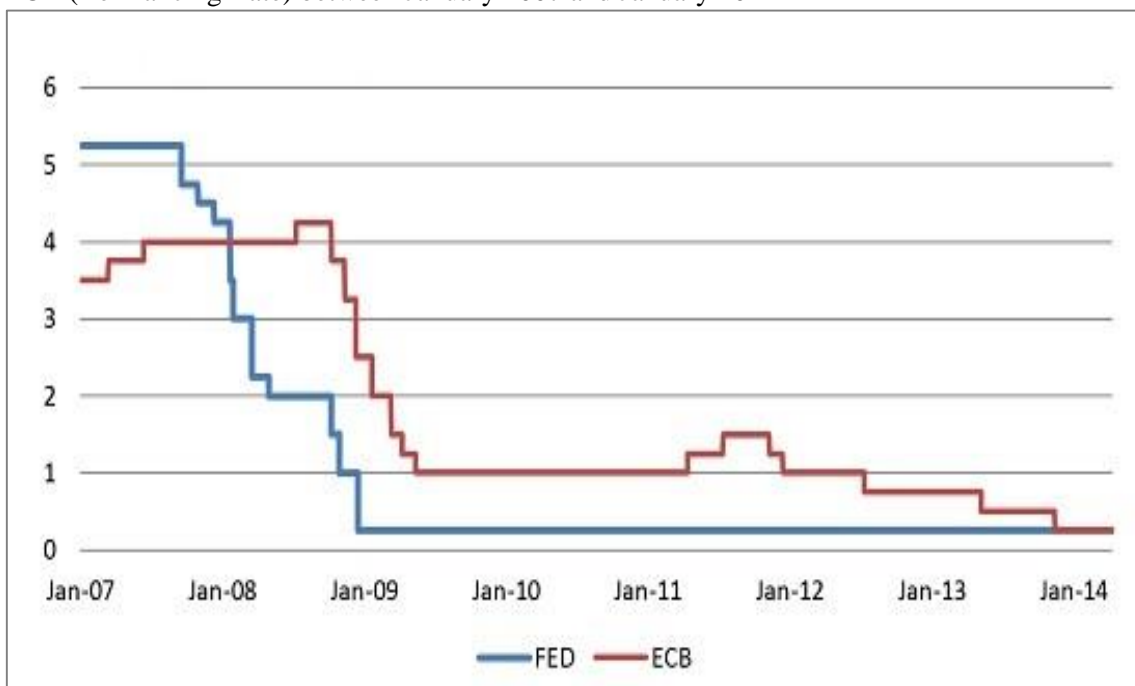
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Appendices

Appendix 1 – Comparison of the interest rate between the FED (Federal Funds Rate) and the ECB (Refinancing Rate) between January 2007 and January 2014



Source: Bruegel.org

Appendix 2 – Public surplus/deficit in the Eurozone Member States between 2002 and 2014 (in % of GDP)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Belgium	0,1	-1,8	-0,2	-2,6	0,2	0,0	-1,1	-5,5	-4,0	-4,1	-4,1	-2,9	-3,2
Germany	-3,9	-4,1	-3,7	-3,3	-1,5	0,3	0,0	-3,0	-4,1	-0,9	0,1	0,1	0,7
Estonia	0,4	1,8	2,4	1,1	2,9	2,5	-2,7	-2,2	0,2	1,2	-0,2	-0,2	0,6
Ireland	-0,3	0,8	1,4	1,3	2,8	0,3	-7,0	-13,9	-32,5	-12,7	-8,1	-5,8	-4,1
Greece	na	na	na	na	na	na	na	na	na	-10,2	-8,7	-12,3	-3,5
Spain	-0,4	-0,4	0,0	1,2	2,2	2,0	-4,4	-11,0	-9,4	-9,4	-10,3	-6,8	-5,8
France	-3,1	-3,9	-3,5	-3,2	-2,3	-2,5	-3,2	-7,2	-6,8	-5,1	-4,8	-4,1	-4,0
Italy	-3,1	-3,4	-3,6	-4,2	-3,6	-1,5	-2,7	-5,3	-4,2	-3,5	-3,0	-2,9	-3,0
Cyprus	-4,1	-5,9	-3,7	-2,2	-1,0	3,3	0,9	-5,5	-4,8	-5,8	-5,8	-4,9	-8,8
Latvia	-2,2	-1,6	-1,0	-0,4	-0,6	-0,6	-4,0	-9,0	-8,1	-3,3	-0,8	-0,7	-1,4
Lithuania	na	na	-1,4	-0,3	-0,3	-0,8	-3,1	-9,1	-6,9	-8,9	-3,1	-2,6	-0,7
Luxembourg	2,3	0,5	-1,1	0,2	1,4	4,2	3,3	-0,5	-0,5	0,4	0,1	0,9	0,6
Malta	-5,4	-9,1	-4,4	-2,7	-2,6	-2,3	-4,2	-3,3	-3,3	-2,6	-3,6	-2,6	-2,1
Netherlands	-2,1	-3,0	-1,8	-0,3	0,2	0,2	0,2	-5,5	-5,0	-4,3	-4,0	-2,3	-2,3
Austria	-1,3	-1,8	-4,8	-2,5	-2,5	-1,3	-1,4	-5,3	-4,5	-2,6	-2,2	-1,3	-2,4
Portugal	-3,3	-4,4	-6,2	-6,2	-4,3	-3,0	-3,8	-9,8	-11,2	-7,4	-5,6	-4,8	-4,5
Slovenia	-2,4	-2,6	-2,0	-1,3	-1,2	-0,1	-1,4	-5,9	-5,6	-6,6	-4,0	-14,9	-4,9
Slovakia	-8,1	-2,7	-2,3	-2,9	-3,6	-1,9	-2,4	-7,9	-7,5	-4,1	-4,2	-2,6	-2,9
Finland	4,1	2,4	2,2	2,6	3,9	5,1	4,2	-2,5	-2,6	-1,0	-2,1	-2,5	-3,2

Source: Eurostat Accessed: 05/05/2015

General government consolidated gross debt - Excessive deficit procedure (based on ESA 2010)

Data for Greece between 2002 and 2010 is not available (na) due to misconduct by the Greek authorities.

Appendix 3 – Debt to GDP ratio in the Eurozone between 2002 and 2014 (in % of GDP)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Belgium	104.9	101.2	96.6	94.7	90.7	86.8	92.2	99.2	99.5	102.0	103.8	104.4	106.5
Germany	59.4	63.2	64.9	67.1	66.5	63.7	65.1	72.6	80.5	77.9	79.3	77.1	74.7
Estonia	5.7	5.6	5.1	4.5	4.4	3.7	4.5	7.0	6.5	6.0	9.7	10.1	10.6
Ireland	30.7	30.1	28.3	26.2	23.8	24.0	42.6	62.3	87.4	111.2	121.7	123.2	109.7
Greece	na	na	na	na	103.4	103.1	109.3	126.8	146.0	171.3	156.9	175.0	177.1
Spain	51.3	47.6	45.3	42.3	38.9	35.5	39.4	52.7	60.1	69.2	84.4	92.1	97.7
France	60.1	64.2	65.7	67.2	64.4	64.4	68.1	79.0	81.7	85.2	89.6	92.3	95.0
Italy	101.9	100.4	100.0	101.9	102.5	99.7	102.3	112.5	115.3	116.4	123.1	128.5	132.1
Cyprus	60.1	63.6	64.7	63.4	59.3	54.1	45.3	54.1	56.5	66.0	79.5	102.2	107.5
Latvia	13.2	13.9	14.2	11.7	9.9	8.4	18.6	36.4	46.8	42.7	40.9	38.2	40.0
Lithuania	22.2	20.5	18.7	17.6	17.2	15.9	14.6	29.0	36.2	37.2	39.8	38.8	40.9
Luxembourg	6.5	6.4	6.5	6.3	7.0	7.2	14.4	15.5	19.6	19.1	21.9	24.0	23.6
Malta	63.2	69.1	72.0	70.1	64.6	62.4	62.7	67.8	67.6	69.7	67.4	69.2	68.0
Netherlands	48.3	49.4	50.0	49.4	44.9	42.7	54.8	56.5	59.0	61.3	66.5	68.6	68.8
Austria	66.3	65.5	64.8	68.3	67.0	64.8	68.5	79.7	82.4	82.1	81.5	80.9	84.5
Portugal	56.2	58.7	62.0	67.4	69.2	68.4	71.7	83.6	96.2	111.1	125.8	129.7	130.2
Slovenia	27.3	26.7	26.8	26.3	26.0	22.7	21.6	34.5	38.2	46.5	53.7	70.3	80.9
Slovakia	42.8	41.5	40.6	33.8	30.7	29.8	28.2	36.0	40.9	43.4	52.1	54.6	53.6
Finland	40.2	42.8	42.7	40.0	38.2	34.0	32.7	41.7	47.1	48.5	52.9	55.8	59.3

Source: AMECO Accessed: 05/05/2015

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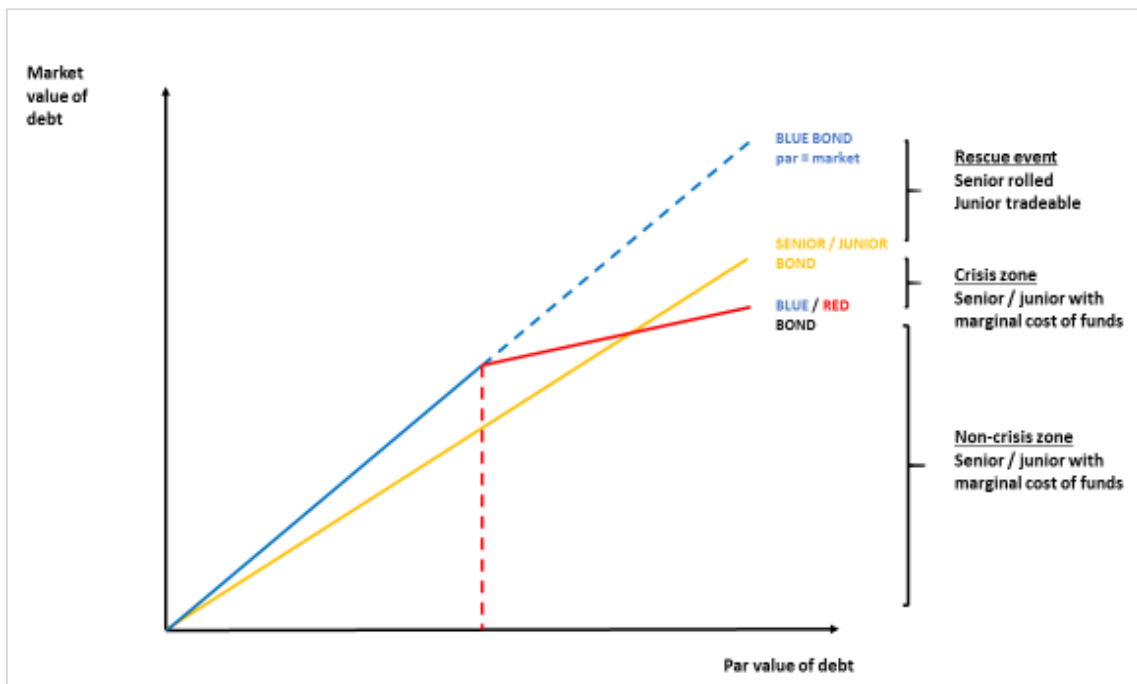
Appendix 4 – The Blue Bond Proposal with predicted data for 2016 (values in billions of euros)

Country	GDP	Public Debt	Public debt (% of GDP)	Blue debt	Red debt
Belgium	421.6	448.6	106.4	252.9	195.7
Germany	3,131.9	2,136.2	68.2	1,879.2	257.1
Estonia	21.5	2.1	9.8	2.1	0.0
Ireland	206.3	214.1	103.8	123.8	90.3
Greece	184.3	319.6	173.5	110.6	209.1
Spain	1,126.8	1,142.5	101.4	676.1	466.5
France	2,244.8	2,176.5	97.0	1,346.9	829.6
Italy	1,683.2	2,199.0	130.6	1,009.9	1,189.0
Cyprus	17.7	19.2	108.4	10.6	8.6
Latvia	26.3	10.6	40.4	10.6	0.0
Lithuania	40.1	15.0	37.3	15.0	0.0
Luxembourg	51.4	13.0	25.3	13.0	0.0
Malta	8.8	5.7	65.4	5.3	0.5
Netherlands	687.4	473.4	68.9	412.4	61.0
Austria	345.0	296.1	85.8	207.0	89.2
Portugal	183.9	226.3	123.0	110.4	115.9
Slovenia	39.5	32.3	81.7	23.7	8.6
Slovakia	81.3	43.5	53.5	43.5	0.0
Finland	212.3	137.6	64.8	127.4	10.2
Eurozone	10,713.9	9,911.4	92.5	6,380.3	3,531.1

Author's elaboration based on data from AMECO

Estimated data for 2016 accessed on 05/05/2015

Appendix 5 - Market pricing of blue/red bonds vs. sovereign bonds partially insured by the Eurozone



Source: (Dübel, 2011)

Appendix 6 – European Safe Bonds estimated for 2015 (values in billions of euros)

Country	2014 GDP	2013 GDP	2012 GDP	2011 GDP	2010 GDP	5 year average GDP	Percentage in EDA	Sovereign debt acquired by the EDA
Belgium	402.3	395.3	388.3	380.0	365.7	386.3	3.9	238.1
Germany	2,903.8	2,809.5	2,749.9	2,699.1	2,576.2	2,747.7	27.9	1,693.5
Estonia	19.5	18.7	17.6	16.4	14.7	17.4	0.2	10.7
Ireland	185.4	174.8	172.8	171.0	164.9	173.8	1.8	107.1
Greece	179.1	182.4	194.2	207.8	226.2	197.9	2.0	122.0
Spain	1,058.5	1,049.2	1,055.2	1,075.1	1,080.9	1,063.8	10.8	655.7
France	2,142.0	2,113.7	2,091.1	2,059.3	1,998.5	2,080.9	21.1	1,282.6
Italy	1,616.0	1,609.5	1,615.1	1,638.9	1,605.7	1,617.0	16.4	996.7
Cyprus	17.5	18.1	19.4	19.5	19.1	18.7	0.2	11.5
Latvia	24.1	23.2	22.0	20.3	18.2	21.6	0.2	13.3
Lithuania	36.3	35.0	33.3	31.2	28.0	32.8	0.3	20.2
Luxembourg	47.1	45.3	43.8	42.4	39.4	43.6	0.4	26.9
Malta	8.0	7.6	7.2	6.9	6.6	7.3	0.1	4.5
Netherlands	655.4	642.9	640.6	642.9	631.5	642.7	6.5	396.1
Austria	329.0	322.6	317.2	308.7	294.2	314.3	3.2	193.7
Portugal	173.1	169.4	168.4	176.2	179.9	173.4	1.8	106.9
Slovenia	37.2	36.1	36.0	36.9	36.2	36.5	0.4	22.5
Slovakia	75.2	73.6	72.2	70.2	67.2	71.7	0.7	44.2
Finland	204.0	202.0	199.8	196.9	187.1	198.0	2.0	122.0
Eurozone	10,113.4	9,928.8	9,844.1	9,799.6	9,540.3	9,845.2	100.0	6,068.1

Author's elaboration based on data from AMECO

Gross domestic product at current prices

Accessed on 05/05/2015

Appendix 7 – European Redemption Pact with data estimated for 2016 (values in billions of euros)

Country	GDP	Public debt	Public debt/GDP ratio	Debt up to 60% of GDP	Debt transferred to the ERP	Percentage in the ERP
Belgium	421.6	448.6	106.4	252.9	195.7	5.9
Germany	3,131.9	2,136.2	68.2	1,879.2	257.1	7.7
Estonia	21.5	2.1	9.8	12.9	0.0	0.0
Ireland	206.3	214.1	103.8	123.8	90.3	2.7
Greece	184.3	319.6	173.5	110.6	-	-
Spain	1,126.8	1,142.5	101.4	676.1	466.5	14.0
France	2,244.8	2,176.5	97.0	1,346.9	829.6	25.0
Italy	1,683.2	2,199.0	130.6	1,009.9	1,189.0	35.8
Cyprus	17.7	19.2	108.4	10.6	8.6	0.3
Latvia	26.3	10.6	40.4	15.8	0.0	0.0
Lithuania	40.1	15.0	37.3	24.1	0.0	0.0
Luxembourg	51.4	13.0	25.3	30.8	0.0	0.0
Malta	8.8	5.7	65.4	5.3	0.5	0.0
Netherlands	687.4	473.4	68.9	412.4	61.0	1.8
Austria	345.0	296.1	85.8	207.0	89.2	2.7
Portugal	183.9	226.3	123.0	110.4	115.9	3.5
Slovenia	39.5	32.3	81.7	23.7	8.6	0.3
Slovakia	81.3	43.5	53.5	48.8	0.0	0.0
Finland	212.3	137.6	64.8	127.4	10.2	0.3
Eurozone	10,713.9	9,911.4	92.5	6,428.4	3,322.1	100.0

Author's elaboration based on data from AMECO

Estimated data for 2016 accessed on 05/05/2015. Greece would not be included in the ERP since it is currently under an Adjustment Programme. Malta's percentage in the ERP is 0.015.

Appendix 8 – Evolution of public debt in the Eurozone between 2002 and 2014 (in billions of euros)

Country	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
Belgium	288.0	285.7	288.3	294.7	297.1	299.7	327.3	347.0	363.8	387.6	403.2	412.8	428.4
Germany	1,311.2	1,401.1	1,470.9	1,541.8	1,589.7	1,599.4	1,666.4	1,784.1	2,073.7	2,101.8	2,179.8	2,166.0	2,170.0
Estonia	0.4	0.5	0.5	0.5	0.6	0.6	0.7	1.0	1.0	1.0	1.7	1.9	2.1
Ireland	41.5	43.6	44.1	44.4	43.7	47.1	79.6	104.7	144.2	190.1	210.2	215.3	203.3
Greece	na	na	na	na	225.3	240.0	264.6	301.0	330.3	356.0	304.7	319.2	317.1
Spain	384.1	382.8	389.9	393.5	392.2	383.8	439.8	568.7	649.3	743.5	891.0	966.2	1,033.9
France	957.7	1,051.3	1,124.5	1,190.8	1,194.2	1,253.0	1,358.2	1,531.6	1,632.5	1,754.4	1,869.2	1,953.4	2,037.8
Italy	1,371.7	1,397.5	1,449.7	1,518.6	1,588.1	1,605.9	1,671.1	1,769.8	1,851.2	1,907.5	1,988.9	2,068.7	2,134.9
Cyprus	7.1	8.1	8.9	9.3	9.4	9.4	8.5	10.0	10.8	12.9	15.4	18.5	18.8
Latvia	1.1	1.3	1.6	1.6	1.7	1.9	4.5	6.9	8.5	8.7	9.0	8.9	9.6
Lithuania	3.4	3.4	3.4	3.7	4.2	4.6	4.8	7.8	10.2	11.6	13.3	13.6	14.8
Luxembourg	1.6	1.7	1.8	1.9	2.3	2.6	5.4	5.6	7.7	8.1	9.6	10.9	11.1
Malta	2.9	3.3	3.5	3.6	3.5	3.6	3.8	4.2	4.5	4.8	4.9	5.2	5.4
Netherlands	238.4	249.9	260.0	267.1	257.6	259.9	348.1	348.9	372.6	393.9	426.1	441.0	451.0
Austria	150.0	151.3	156.5	172.8	178.7	183.0	200.0	228.2	242.4	253.3	258.5	261.0	278.1
Portugal	80.1	85.7	94.5	106.9	115.0	120.1	128.2	146.7	173.1	195.7	211.8	219.6	225.3
Slovenia	6.4	6.9	7.4	7.7	8.2	8.0	8.2	12.5	13.8	17.1	19.3	25.4	30.1
Slovakia	16.0	17.2	18.7	17.0	17.2	18.8	19.2	23.0	27.5	30.5	37.6	40.2	40.3
Finland	59.7	64.9	67.7	65.8	65.9	63.4	63.3	75.5	88.2	95.5	105.7	112.7	121.1
Eurozone	4,921.3	5,156.1	5,391.9	5,641.7	5,994.6	6,104.6	6,601.8	7,277.0	8,005.2	8,474.0	8,960.0	9,260.5	9,533.2

General government consolidated gross debt - Excessive deficit procedure (based on ESA 2010)

Source: AMECO Accessed: 05/05/2015

na – not available

Appendix 9 - The Blue, Yellow and Red Bonds Proposal with estimated data for 2016 (values in billions of euros)

Country	GDP	Public debt	Public debt (% of GDP)	Blue debt	Yellow debt	Red debt
Belgium	421.6	448.6	106.4	252.9	126.5	69.2
Germany	3,131.9	2,136.2	68.2	1,879.2	257.1	0.0
Estonia	21.5	2.1	9.8	2.1	0.0	0.0
Ireland	206.3	214.1	103.8	123.8	61.9	28.5
Greece	184.3	319.6	173.5	110.6	55.3	153.8
Spain	1,126.8	1,142.5	101.4	676.1	338.0	128.4
France	2,244.8	2,176.5	97.0	1,346.9	673.5	156.1
Italy	1,683.2	2,199.0	130.6	1,009.9	505.0	684.1
Cyprus	17.7	19.2	108.4	10.6	5.3	3.3
Latvia	26.3	10.6	40.4	10.6	0.0	0.0
Lithuania	40.1	15.0	37.3	15.0	0.0	0.0
Luxembourg	51.4	13.0	25.3	13.0	0.0	0.0
Malta	8.8	5.7	65.4	5.3	0.5	0.0
Netherlands	687.4	473.4	68.9	412.4	61.0	0.0
Austria	345.0	296.1	85.8	207.0	89.2	0.0
Portugal	183.9	226.3	123.0	110.4	55.2	60.7
Slovenia	39.5	32.3	81.7	23.7	8.6	0.0
Slovakia	81.3	43.5	53.5	43.5	0.0	0.0
Finland	212.3	137.6	64.8	127.4	10.2	0.0
Eurozone	10,713.9	9,911.4	92.5	6,380.3	2,247.1	1,284.1

Author's elaboration based on data from AMECO

Estimated data for 2016 accessed on 05/05/2015