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* Views expressed are those of the authors and do not necessarily reflect official positions of De Nederlandsche Bank.

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Abstract

This paper investigates the role that Eurobonds could play in making EMU stable in the long run. We establish that EMU's budgetary problems are not only caused by lack of budgetary discipline, but also by the large and sudden fiscal deterioration during the financial crisis. This type of shock can never be fully ruled out. EMU member states appear more vulnerable in this situation than countries with their own currency, and risk getting caught in a self-fulfilling spiral of increasing interest rates. This presents a strong case for some type of rescue mechanism. We establish that neither the EFSF/ ESM nor the ECB form the ideal backstop, and that Eurobonds potentially offer a more stable solution, but at the price of important moral hazard problems. All existing Eurobond proposals therefore seek a balance between stabilisation and moral hazard, typically through retaining some degree of market discipline. Our Eurobond proposal improves the trade-off between stabilisation and moral hazard by using Eurobonds themselves to further enforce budgetary discipline. Even then, however, EMU governance has to be strengthened substantially and debt levels have to converge before Eurobonds can be introduced. Therefore, our Eurobond proposal could only serve as the capstone of EMU.

Key Words: Eurobonds, sovereign bond spreads, fiscal risk-sharing, Economic and Monetary Union.

JEL codes: E44, E61, H63, H77, F33, F36

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1. INTRODUCTION

In late 2009, the new Greek government revealed that the 2009 budget deficit would be 12.7% of GDP instead of 6%. In the three years since then, the European sovereign debt crisis has exposed important flaws in the design of the Economic and Monetary Union. One of the issues in the booming literature is the perceived lack of a lender of last resort in the monetary union, which would make the combination of national debt financing with a common currency dangerous (De Grauwe, 2011a). In the course of the crisis, the role of ‘lender of last resort’ has been taken up by the emergency funds for sovereigns EFSF/ESM and implicitly by the ECB, by means of the Outright Monetary Transactions (OMT) programme. While justified by the severe pressure from financial markets, one may wonder whether these mechanisms are the optimal solution to the EMU’s troubles. Would they be capable of preventing new crises in the future? And would it be desirable to have these mechanisms as a permanent solution?

Another element that is often mentioned as a potential solution is the introduction of Eurobonds, common bonds for euro area countries, in most cases accompanied by a joint and several guarantee from all EMU Member States. Many different versions of Eurobonds have been proposed, not only by academics, but also in the recent roadmaps for the future design of EMU as proposed by the European Commission (2012) and EU-president Van Rompuy (2012). Yet Eurobonds remain highly controversial. While some claim that Eurobonds “*would halt the disruption of sovereign bond markets and stop negative spillovers*” (Juncker and Tremonti, 2010), others think that they are “*not such a good idea*” (Issing, 2009) because they “*exacerbate the problems [...] at the root of the crisis*” (Corsetti et al., 2011).

This paper aims to explore the case for Eurobonds in more detail. In doing this, our approach differs in a number of aspects from the existing literature. First, we only focus on the role Eurobonds could play in stabilising EMU. In our analysis a political desire for further European integration, or the search for a lower liquidity premium, do not play a role.¹ Second, some proposals for Eurobonds are motivated by the desire to end the current crisis as soon as possible. While this is understandable, the introduction of Eurobonds fundamentally alters the functioning of the monetary union, while it is very difficult to reverse. We therefore believe that any decision to introduce Eurobonds should be based on

¹ Some literature focuses on the effect of Eurobonds on bond yields, a debate that has become more polarized recently. Some optimistically claim that a large European bond market would benefit from a liquidity premium that could drive bond yields even below the yields on German bunds. By contrast, the CESifo (2011) takes the pessimistic view that the yield would be an average of current yields for member states. We ignore this debate, as we believe that the yield crucially depends on credibility and therefore on the specific institutional arrangements of the plan.

an assessment of their *long-term* desirability. Temporary Eurobond proposals, aimed only at resolving today's crisis, are therefore outside the scope of this paper.

Eurobonds have two main effects on individual member states. On the one hand, they can bring stability, as Eurobonds can protect individual member states against contagion and speculation on financial markets. Countries in fiscal difficulties retain access to market financing, which reduces the risk that liquidity problems turn into solvency problems via higher interest rates, as well as the risk that problems spread from one country to another. On the other hand, Eurobonds increase moral hazard and weaken the incentives for fiscal discipline, as individual countries are not fully confronted with the costs of their higher debt and deficits. The disciplining effect of higher interest rates is felt less, while other countries are liable for unsustainable debts of individual member states. This could ultimately lead to rising debt levels for the euro area as a whole and possibly even to rising interest rates on Eurobonds themselves.

These two opposing effects are exactly the reason why Eurobonds are so controversial. The verdict on the desirability of Eurobonds depends on how one weighs the advantage of greater short-term financial market stability against the disadvantage of weaker fiscal discipline and the risk of unsustainable fiscal positions in the longer term. This in turn is closely interlinked with one's view on the European sovereign bond crisis. Take for instance the causes of the current fiscal problems in member states. If one believes that they are mainly caused by lack of budgetary discipline, Eurobonds would be a reward for bad behavior that could cause even larger problems in the future. But if one believes that these difficulties stem from an exceptionally large and unanticipated negative shock, Eurobonds may be a valuable protection during such extreme events. The same applies to the nature of the current fragilities on bond markets for EMU Member States. If one believes that these fragilities are a rational reaction to solvency problems in member states, Eurobonds would lead to a "*transfer union*" with permanent payments from fiscally sound to fiscally weak countries. But if one believes that these fragilities result from overshooting financial markets that could turn liquidity problems into solvency problems, Eurobonds may protect individual countries even without having to lead to permanent transfers.

To see what contribution Eurobonds could have, the first part of our paper therefore contains a diagnosis of the sovereign debt crisis. Section 2 analyses the causes behind the budgetary problems in individual member states. We find that they are not only caused by lack of budgetary discipline, but mainly by the large and sudden fiscal deterioration during the financial crisis, in some cases larger than what budgetary rules were designed to deal with. The deterioration is primarily caused by the deep and prolonged downturn, with stimulus and financial sector bailouts playing only a modest role. The fiscal setback was much larger in countries with large macroeconomic imbalances, where the

correction of the financial cycle led to a much larger decline in government revenue than expected. The risk of such a large fiscal deterioration in the future is reduced by recent improvements in European governance, such as the stronger budgetary discipline and the new macroeconomic imbalance procedure. But it would be overconfident to think that any surveillance framework could fully prevent financial crises and large fiscal deteriorations.

We then turn to the nature of financial market fragilities in section 3. We establish that EMU member states appear more vulnerable after large fiscal deteriorations than advanced economies with their own currency. This is partly because individual EMU member states lack the exchange rate that could facilitate adjustment after a financial crisis. The exceptionally high level of financial integration and the common institutional framework have also made EMU member states more vulnerable to contagion. In addition, the single currency has increased the elasticity of capital flows and has made countries more vulnerable to self-fulfilling market speculation. The empirical literature convincingly shows that bond yields have shown persistent overshooting for several EMU member states, although more research is necessary to determine the exact nature and causes. In any case, we conclude that some kind of financial rescue mechanism is necessary within the Monetary Union.

In the second part of our paper we investigate the conditions under which a backstop can be effective. In section 4, we conclude that government-funded rescue mechanisms, like the EFSF and ESM, are useful but have inherently limited stabilising properties. In addition, a banking union alone is not sufficient to stabilize EMU. By contrast, using the ECB as lender of last resort for governments could stabilize EMU in the short run, but comes with moral hazard problems and other side effects, not least the potentially detrimental effects on central bank independence and inflation. Eurobonds potentially offer a more stable solution, but also cause large moral hazard problems. If those are not adequately dealt with, the stability offered by Eurobonds will be short-lived. In the end, the precise effects are very dependent on the exact design of Eurobonds (Beetsma and Mavromatis, 2012). Section 5 therefore presents an overview of various Eurobond proposals in the literature. We observe that most proposals try to strike a balance between the benefit of stability on financial markets and the drawback of weaker incentives for fiscal discipline. This is usually done through retaining some degree of market discipline, which will automatically come at the expense of the stabilizing properties of the scheme. Given this trade-off, we conclude that none of the existing Eurobond proposals is without drawbacks.

We conclude with our own Eurobond proposal in section 6. We believe that our proposal improves the trade-off between stability and moral hazard by using Eurobonds themselves as an instrument to enforce fiscal discipline. This would be done by introducing centrally issued Eurobonds for the full public debt of EMU member states, under the condition that Member States will no longer have the

ability to individually raise funds in the money or capital markets. An independent budgetary authority will distribute the necessary (Eurobond) funding to the Member States, but only if they have sustainable fiscal policies as defined in the Maastricht Treaty or implement a strictly monitored adjustment programme. Even then, the full mutualisation of risks on government debt of individual Member States is only sustainable if accompanied by much strengthened other safeguards to prevent that these budgetary risks arise in Member States, such as a banking union with strong European supervision, and a stricter enforcement of rules to prevent macroeconomic imbalances. In addition, Member States should first reduce their debt towards a much lower level than is currently the case, which implies that this far-reaching form of Eurobonds cannot be used as a crisis instrument, but rather as the capstone of EMU.

2. WHAT CAUSED THE BUDGETARY PROBLEMS IN EMU MEMBER STATES?

The dire fiscal situation in EMU member states is often attributed to a lack of budgetary discipline. This factor has undoubtedly played an important role. Although many countries had improved their budgetary positions in the run-up towards EMU-membership, it is by now well-documented that several countries loosened their belt considerably once their place in the monetary union was secured (CPB, 2011). Moreover, the budgetary adjustment that countries planned in their stability programs was usually not achieved, as the budgetary adjustment that was actually implemented in practice was much less ambitious (Beetsma, Giuliodori and Wierds, 2009). Finally, the Ecofin Council proved to be too politicized to provide sufficient peer pressure and to ensure an effective enforcement of EMU's budgetary rules, especially in good times (De Haan, Berger and Jansen, 2004). The fact that Council failed to impose sanctions when Germany and France had an excessive deficit in 2005 provided a severe blow to the credibility of the Stability and Growth Pact (SGP).

As a result of all this, in many countries fiscal policy turned out to be procyclical and both budget deficits and government debts were much higher than they could have been if the rules of the SGP had been fully respected. As a result, several EMU member states did not have the budgetary starting position that was necessary to absorb large economic shocks like the global financial crisis. Not all EMU member states had achieved their medium term objective for the cyclically adjusted budget balance in 2007, and some countries still had an actual budget deficit above the threshold of 3% of GDP (Table 1). Government debts were also too high in many countries.

The bad starting position was most obvious in some of the current problem countries: Greece, Portugal and Italy. But surprisingly, it was completely absent in Spain and Ireland, that had budget surpluses and very low government debts in 2007. Indeed, the budgetary performance before the crisis and the

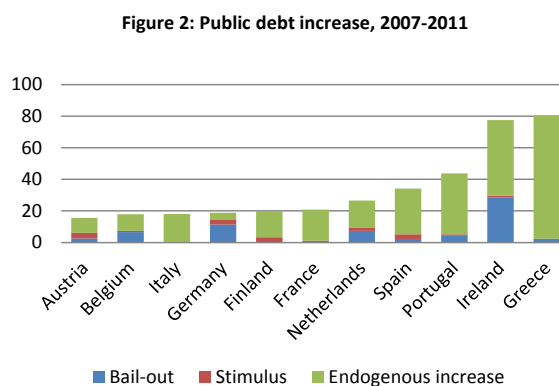
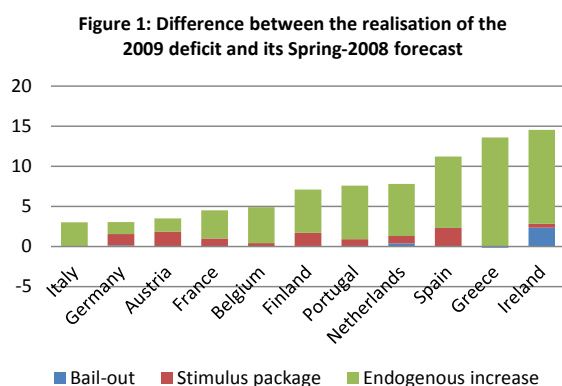
size of sovereign bond spreads now are hardly correlated (Pisani-Ferry, 2012). Lack of budgetary discipline is not sufficient to explain the current fiscal situation.

Table 1: Budgetary situation at the start of the crisis (% GDP, 2007)

	GR*	PT	ITA	FRA	EMU	GER	NL	IRL	SP
Budget balance	-6,4	-3,1	-1,5	-2,7	-0,7	0,3	0,2	0,1	1,9
Cyclically adjusted budget balance	-7,1	-2,6	-1,3	-2,5	-0,6	-0,1	0,1	0	2,1
Public debt	105	68,3	104	63,9	66,2	64,9	45,3	25	36,1

Source: EC Spring Forecast 2008. *For Greece numbers from after the revision of budgetary aggregates in 2009 are reported.

Another important cause is the large and sudden deterioration of the fiscal position that occurred as a result of the global financial crisis (Gilbert and Hessel, 2012). The increase in deficits and debts was in several cases much larger than what the existing budgetary rules in EMU were designed to deal with. In the spring of 2008, a few month before the collapse of Lehman Brothers, the European Commission projected an average budget deficit for 2009 of only 1.1% of GDP in the euro area. But due to the crisis, the average actual budget deficit for 2009 amounted to 6.3% of GDP, a staggering 5.2% higher than foreseen before the crisis (figure 1). Almost all EMU member states breached the 3%-threshold for the budget deficit in 2009, including the countries that stuck to the rules before the crisis. This could only have been avoided if EMU countries had originally targeted an average budget surplus of over 2% of GDP.



Sources: EC Spring Forecast 2008; EC Winter Forecast 2012; Public finances in EMU 2010; Eurostat

The higher deficits also led to a substantial increase in government debt. The average debt in the euro area increased by almost 22% of GDP between 2007 and 2011 (figure 2). This has brought the average debt ratio well over the 60% threshold of the Maastricht treaty, and towards levels that are thought to be associated with lower long term growth (Reinhart and Rogoff, 2010; Cecchetti, Mohanty and Zampolli, 2011).

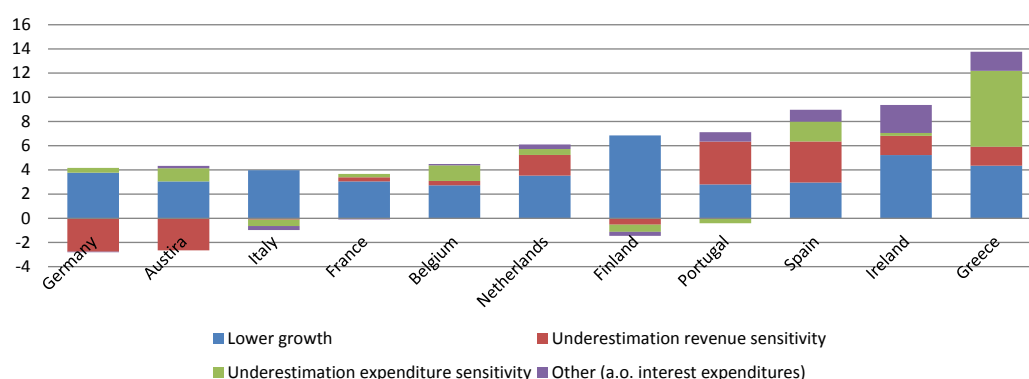
The deterioration of public finances was even larger still in most of the countries that are currently under pressure from financial markets, with the exception of Italy where the increase in the deficit was relatively contained. In Portugal, Ireland, Greece and Spain, the budget deficit for 2009 increased by

an enormous 11.2% of GDP on average, while the debt ratio increased on average by 51.2% of GDP between 2007 and 2011.² Such a large and sudden deterioration would bring any country into trouble.

These results are in line with Reinhart and Rogoff (2009a,b), who show that financial crises usually lead to a large increase in government debt. They also confirm the historical pattern that the direct costs of financial sector bailouts only play a limited role in this increase (see figure 2). Financial sector bailout only had a significant effect on debt in Ireland, but the Irish debt also increased strongly without these costs. The effect of discretionary budgetary stimulation packages was also relatively small. As is usual after financial crises, by far the largest share of the budgetary deterioration is related to the deep and prolonged economic downturn.

An important remaining question is *why* the economic downturn could cause such a large swing in the budgetary position of member states. Two factors explain the large swing in the budget balance. First, the financial crisis was an unusually large negative shock. Total GDP-growth over 2008 and 2009 was almost 7 percentage points lower than projected before the crisis. Whereas ex-post estimates of the 2009 output gap are (for most countries) more or less comparable with the representative output gap that the European Commission uses to calculate the individual benchmarks (Medium Term Objectives, or MTOs) for the cyclically-adjusted budget balance, the total downward revision (output gap and potential growth) was far larger than the MTO was designed to deal with (Gilbert and Hessel, 2013).. The MTOs were calculated over the period 1980-2005 (European Commission, 2006), when growth was relatively stable due to the great moderation. They therefore do not provide adequate cover for shocks as big as the 2009 recession. The large slowdown in (expected) growth explains an important part of the budgetary deterioration in all EMU Member States.

Figure 3: Causes behind the endogenous increase of the budget deficit, 2009



Source: EC Spring forecast 2008; EC Winter Forecast 2012; own calculations

² The situation in Greece differs in one important aspect from the situation in the other countries, as the deterioration of the deficit is partly driven by an upward revision of the deficit figures for previous years.

The second reason for the large swing in the budget balances is that public finances were much more sensitive to the slowdown than expected. In many countries, the increase in the budget deficit was larger than could be foreseen on the basis of the decrease in GDP growth and the standard budgetary elasticities that had been estimated over a longer period. This higher sensitivity was concentrated on the revenue side, with the exception of Greece where expenditure increased due to data revisions (figure 3). The effect was most pronounced in the countries that are currently under pressure from financial markets, and amounted up to a massive 3.5% of GDP in Spain and Portugal.

The explanation for the unusual decline in revenue is that the recession in 2009 coincided with a turn of the financial cycle and a correction of macroeconomic imbalances that had built in some countries in the decade before the crisis. This correction was especially severe in Greece, Ireland, Italy, Portugal and Spain. Recent research shows that such financial cycles have large effects on government revenues that go beyond the effects of GDP growth (Bénétrix and Lane, 2011; Borio, 2012). Booms lead to a large temporary increase in revenues. Rising asset prices increase revenues in capital gains and transaction taxes, while wealth effects drive up the share of domestic demand in the economy and thereby indirect tax revenues (Eschenbach and Schuknecht, 2004; Dobrescu and Salman, 2011; Lendvai, Moulin and Turrini, 2011). These temporary revenues are usually mistaken for lasting improvements, also because current methods of cyclical adjustment do not properly correct for the financial cycle. The tax windfalls therefore lead to procyclical government spending, until the financial downturn causes an unusually strong decline in revenue and reveals that the structural fiscal position is much weaker than anticipated. The periphery of the Eurozone indeed experienced a much stronger swing in domestic absorption than other member states, which explains the unexpected decline in revenues (figure 4). It also explains how Ireland and Spain could run into trouble even though their fiscal position before the crisis looked perfectly sound. The size of the decline in revenues is strongly correlated with the size of imbalances before the crisis, proxied by the current account (figure 5).

Our analysis implies that the improvements in the fiscal rules that have been implemented since the start of the debt crisis are very necessary, but may not be sufficient to prevent the type of budgetary problems that we currently face.³ A stricter implementation of the current budgetary rules cannot prevent that financial crises may lead to unexpected and large deteriorations in public finances, as the Spanish and Irish example underline. Additional improvements in the governance of the Eurozone seem necessary. One potential improvement is to include a better assessment of the effects of the financial cycle on government revenue into the budgetary surveillance framework. This could prevent

³ The new rules are included in the so-called six-pack, two-pack and fiscal compact.

that temporary windfalls are spent, and would therefore lead to higher budgetary buffers in good times. Higher buffers would indeed be important, but there are limits to this. It would require incredibly high buffers to cushion a budgetary deterioration as large as the periphery of the Eurozone has just experienced.

Figure 4: Growth of GDP and domestic demand

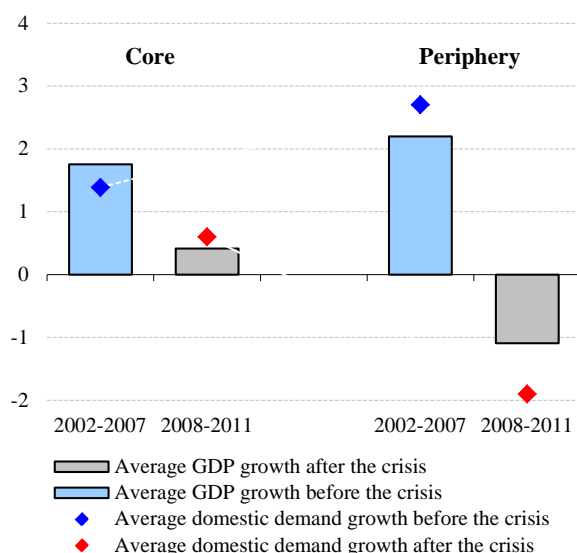
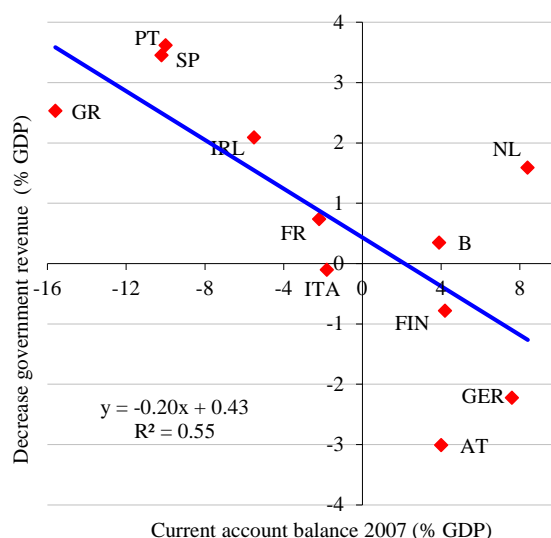


Figure 5: Current account and sensitivity of public revenue



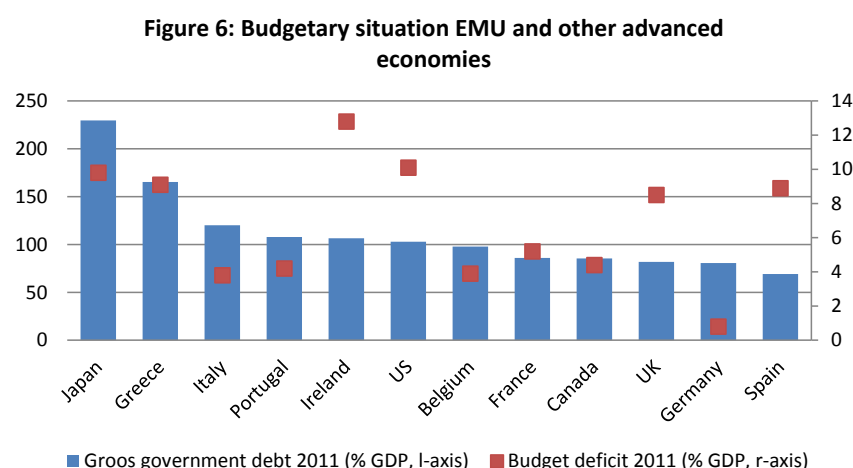
Another necessary improvement in European governance is therefore to better prevent financial and macroeconomic imbalances themselves, as this would reduce the risk of large fiscal deteriorations. Recent steps in this direction are the establishment of the European Systemic Risk Board (ESRB) and the introduction of the new macroeconomic imbalance procedure (MIP). This will probably help, although this framework could be made more effective. But it would be overconfident to think that any surveillance framework could fully prevent financial imbalances. Reinhart and Rogoff (2009) make very clear that financial imbalances are not recognized time and time again, and this would unlikely be different the next time.⁴ The risk of new crises also remains high as the world is more financialized than ever, with both the size of financial sectors and the scale of financial integration at unprecedented levels (Taylor, 2012). Therefore, even strong budgetary and macroeconomic surveillance can never fully rule out that financial crises would cause an economic downturn leading to large and sudden fiscal deteriorations.

3. ARE EMU MEMBER STATES MORE VULNERABLE?

The risk of fiscal deteriorations would not be such a big problem, if the course of the debt crisis had

⁴ Although the establishment of the Banking Union in the euro area would spread some of the costs of these crises more evenly across member states.

not suggested that EMU member states are more vulnerable during periods of high government debt than countries with their own currency (De Grauwe, 2011a). The budgetary situation of most member states is very comparable to that in other advanced economies after the financial crisis (figure 6). But while most other countries continue to finance their debt against low interest rates, some EMU countries are facing severe liquidity problems and very high interest rates on their debt. Comparisons between the euro area and other countries are still relatively scarce in the empirical literature, but do suggest that the spreads in Southern Europe are higher than in other countries with comparable fiscal fundamentals (Aizenman, Hutchison and Jinjarak, 2011; De Grauwe and Ji, 2012; Poghosyan, 2012).



Source: IMF fiscal monitor October 2012

This larger sensitivity may partly be a rational market reaction to the specific economic vulnerabilities in the euro area. First of all, individual EMU member states do not have their own exchange rate and monetary policy as an adjustment mechanism after large economic shocks. This potentially deepens and prolongs the recession once a financial crisis occurs. The budgetary adjustment that is required after a large and sudden fiscal deterioration is therefore more painful than in countries with their own currency, at least in the short run. This is all the more true for the southern European member states that suffer from imbalances like current account deficits and a loss in competitiveness. These imbalances need to be restored via internal devaluation, which not only reduces real GDP-growth but also inflation for a longer period. Several papers suggest that macroeconomic fundamentals like growth, current accounts and real exchange rates influence euro area spreads (De Grauwe and Ji, 2012; Giordano et al., 2012).

Second, euro area countries are probably more vulnerable to a negative interaction between the government and the banking sector during crisis periods. One reason is that problems in the relatively large banking sectors of some EMU member states directly affect public finances, as the responsibility for bank supervision and resolution still lies with member states. While our analysis shows that the

budgetary effects of financial bailouts were modest in most countries, this factor played an important role in Ireland and probably Spain (in the latter case mainly through expectations of future losses). Moreover, uncertainty and expectations regarding bank losses have also influenced market sentiment for Spain and possibly for other countries. Another important reason for the negative interaction is that funding problems for the sovereign also directly affect the domestic banking sector. Most European banks hold large quantities of domestic government debt on their balance sheet (Pisani-Ferry, 2012). The funding problems for the governments of European member states therefore directly expose domestic banks to large potential losses. These potential losses weaken the domestic banking sector, further aggravating the recession and further undermining the sustainability of public finances. There is also some evidence that instability in the banking sector has affected sovereign spreads (Di Cesare et al., 2012).

The factors discussed so far are related to fundamentals. However, the larger sensitivity of euro area spreads may also contain elements of overshooting that drive interest rates above their fundamental value, due to for instance contagion or self-fulfilling multiple equilibria. The third reason for the higher sensitivity is that euro area countries are more vulnerable to contagion than other advanced economies (Forbes, 2012).⁵ One reason is that the single currency has increased trade and especially financial integration to much higher levels than in other advanced economies. The average size of foreign assets and liabilities in the euro area for instance amounted to almost 290% of GDP just before the financial crisis, against an average 180% in other advanced economies. Another reason for the larger susceptibility to contagion is that euro area countries share the common institutional framework of the monetary union, with elements such as the ECB, the Stability and Growth Pact and the Ecofin council. It is therefore much more likely that decisions with respect to one country, for instance related to bailouts or private sector involvement, will also affect the others, and markets take this into consideration. There is much evidence that spreads in the euro area are affected by contagion, but this doesn't necessarily imply that this would drive spreads away from their fundamental value (Caceres et al., 2010; Arezki et al., 2011; Favero and Missale, 2011; Mink and De Haan, 2012; Giordano et al., 2012; Metiu, 2012).

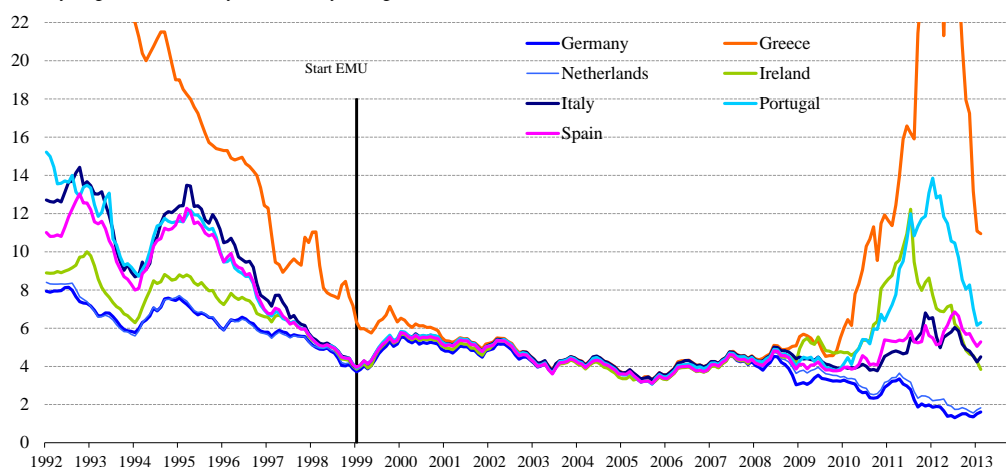
Finally, and related to the factors above, the single currency may have increased the elasticity of capital flows with respect to fundamentals within the euro area (De Grauwe, 2011a; Lane, 2012a,b). It is easier for both foreigners and residents to move funds out of one member state to another, because

⁵ There is a large literature on the exact definition of contagion (see also Mink and De Haan, 2012). We use the relatively broad definition by Forbes (2012): the transmission of an extreme negative shock in one country to another country. This definition includes the spread of crises via fundamental linkages such as trade or banks. This definition therefore does not necessarily imply that contagion would drive spreads away from their fundamental value, although it remains a possibility.

they do not need to switch currencies and therefore face lower transaction costs or exchange rate risks. This factor is further aggravated because EMU member states do not have their own central bank that can act as a lender of last resort once the government is faced with liquidity problems (De Grauwe, 2011a,b; Buiter and Rahbari, 2012). As a result, individual member states do not have full control over their currency, an issue that resembles the problem of *original sin* that aggravates financial crises in emerging markets. This makes euro area countries more vulnerable than other advanced economies to *multiple equilibria* in the sovereign debt market, where market loss of confidence can trigger interest rate increases and a self-fulfilling solvency crisis (De Grauwe, 2011a). Indeed, the southern European countries are currently thought to suffer from *sudden stops* in external financing (Merler and Pisani-Ferry, 2012). If left unchecked, these self-fulfilling expectations would form an inherent instability, because the higher interest rates further reduce the sustainability of public finances. A liquidity crisis would then eventually drive even fundamentally sound countries into insolvency.

Figure 7: bond yields in the euro area

Ten year government bond yields, monthly averages



To determine the nature of financial market reactions for EMU member states more precisely, we briefly address the fast-growing empirical literature on sovereign debt spreads in the euro area. The results have to be interpreted with caution, as fundamental values of financial assets are by definition highly uncertain. Nevertheless, a first conclusion is that there is a lot of convincing evidence that market discipline in the euro area is not constant over time. As figure 7 shows, spreads were exceptionally low during the first decade of EMU, and the reaction to fiscal fundamentals was weak in this period (De Grauwe and Yi, 2012; Bernoth and Erdogan, 2012; Giordano, Pericoli and Tommasino, 2012). There is some evidence that the euro has shielded countries from market discipline, as the reaction of yields to government debt declined after the start of EMU (Bernoth, Von Hagen and Schuknecht, 2012) and as euro area spreads were lower than in other countries with similar fundamentals (Poghosyan, 2012). But spreads widened considerably after the global financial crisis in 2008 and especially after the start of the European sovereign debt crisis. This was partly caused by the

increase in global risk aversion (Haugh, Ollivaud, Turner, 2009; Caceres, Guzzo and Segoviano, 2010; Aizenman, Hutchison and Jinjark, 2011). In addition, spreads started to react more strongly to fiscal fundamentals in this period (Haugh et al., 2009; Bernoth et al., 2012; Bernoth and Erdogan, 2012; Giordano et al., 2012; De Grauwe and Ji, 2012). Several of these studies also find evidence of non-linearities, that suggest that spreads react more strongly when budget deficits and government debts are high. The stronger reaction to fiscal fundamentals may be a sign of “*wake-up call contagion*” (Giordano et al., 2012) where the budgetary problems in Greece have reinforced the awareness of financial markets of sovereign risk⁶. But it is not necessarily a sign that financial markets are overshooting. Bernoth et al. (2012) for instance conclude that this reinforces market discipline.

Second, there also is quite a lot of evidence in the literature that financial markets have been overshooting, especially in the more recent phase of the crisis. Yield spreads in the periphery of the Eurozone were higher than could be explained on the basis of fiscal fundamentals. The evidence of overshooting continues to hold when other economic fundamentals are included, such as current accounts (De Grauwe and Ji, 2012), potential growth (Poghosyan, 2012), private debt (Giordano et al., 2012) and indicators of financial sector problems (Di Cesare et al., 2012). In addition, there is convincing evidence that yields spreads are very persistent, which implies that the overshooting is long lasting (Giordano et al., 2012; De Grauwe and Ji, 2012) and possibly that “*markets can stay irrational longer than a country can stay solvent*” (Favero and Missale, 2011). There is no agreement yet on the exact causes of overshooting. De Grauwe and Ji (2012) emphasize the role of self-fulfilling multiple equilibria and the absence of a lender of last resort that could lead to inherent instability for euro area countries. Favero and Missale (2011) and Giordano et al. (2012) point instead to the influence of contagion from other countries, while Di Cesare et al. (2012) attribute the overshooting to a perception of a euro area break-up risk. By contrast, Steinkamp and Westermann (2012) claim that the high spreads are caused by the increasing share of loans with (implicit) senior credit status. More research on the exact causes and nature of the overshooting therefore seems warranted.

To sum up, EMU member states are more vulnerable after large fiscal deteriorations than advanced economies with their own currency. EMU member states lack adjustment mechanisms, while the high level of financial integration and the common institutional framework increase the risk of contagion. In addition, the single currency has increased the elasticity of capital flows. Indeed, the empirical literature shows that government bond yields in the euro area have shown signs of persistent overshooting during the sovereign debt crisis. To address this overshooting, some kind of financial rescue mechanism is therefore warranted within the Monetary Union.

⁶ Mink and De Haan (2012) find that the price of sovereign debt of Portugal, Ireland, and Spain responds to both news about a Greek bailout and news about Greece; and suggest the latter points towards wake-up contagion.

4. HOW TO STABILIZE EMU

During the crisis, the role of ‘lender of last resort’ has been taken up by the emergency funds for sovereigns EFSF/ ESM and implicitly, by means of the Outright Monetary Transactions programme of the ECB. Neither necessarily forms the optimal long-run solution, and over the course of the last few years several other mechanisms have been proposed, ranging from unlimited and unconditional bond buying by the ECB to the introduction of Eurobonds. In the following, we will first discuss under what conditions a backstop can be effective in both the short- and longer run. We will then discuss the different possible backstop mechanisms for sovereigns.

As argued, fundamentally solvent euro area countries face the risk of ending up in a bad equilibrium where interest rates keep rising because of an increasing default risk, and where the default risk keeps increasing because of the rising interest rates. As euro area countries are closely integrated and in a similar position (issuing debt in a currency they do not control), a fiscal shock in one country might ultimately also lead to spiraling interest rate in other euro area countries (De Grauwe, 2011a, Kopf, 2011). An effective backstop mechanism must be able to break this vicious circle. That is, it must either be capable of bringing interest rates down sufficiently, or it must be capable of offering alternative financing possibilities to the country in question, which is then no longer dependent on financial markets and not harmed by increasing market interest rates.

Both options require deep pockets. This not only reflects the enormous size of government debt in the euro area (around EUR 85000 billion in 2012, 93% of GDP) and the large amounts that need to be (re)financed each year, but also the fact that bond yields are largely driven by expectations that may be self-fulfilling. Sovereign yields spiraling out of control can therefore only be credibly brought down by an institution that has (near) unlimited means (De Grauwe, 2011b; Ghezzi, 2012). The alternative, a backstop which does not attempt to bring down market interest rates but which offers countries alternative financing options, needs large funds too: it needs to be capable of offering affordable financing to (potentially multiple) euro area countries for a period long enough for market interest rates to return to more affordable levels.

In principle, any insurance mechanism also carries with it the possibility of contagion (Bijlsma and Vallée, 2012). Insolvency of the insured may threaten the solvency of the insurer. In this way, a wrongly designed backstop mechanism might amplify instability instead of reducing it. A credible backstop mechanism needs to be designed in such a way that this risk is minimized.

Conceptually, a European backstop mechanism can be seen as an insurance mechanism for sovereigns. Any insurance mechanism potentially causes moral hazard, in this case by reducing the incentives for

fiscal discipline, structural reforms and sound macroeconomic policy in general. The more generous the insurance, the bigger the moral hazard problem. If this is not tackled, a backstop mechanism will ultimately lead to deteriorating fiscal and economic fundamentals in the euro area as a whole. Such a backstop might be able to fend off market panic in the short run, but does not lead to a sustainable EMU over the longer run. We will therefore add the condition that a backstop for sovereigns is only effective if it effectively counters moral hazard problems.

Any insurance mechanism also faces the problem of adverse selection. If you cannot differentiate the price of the insurance, only bad risks will voluntarily participate. Sometimes, this problem is solved by means of obligatory participation (e.g. health insurance). It is however hard to force sovereign countries to participate in a scheme that does not benefit them. Even if they would join in the face of crisis, it might not be credible that they stay in once the panic is gone and people forget about EMU's institutional shortcomings. The insurance mechanism therefore needs to be beneficial for all. For this, the absence of moral hazard is critical. However, depending on the specifics of the scheme, an insurance scheme for countries might come with other negative side-effects. An example could be the risk of higher inflation, which would put the long-run viability of the backstop into question.

Table 2 - Indicative sovereign backstop mechanism score board (see text)

	<i>EFSF</i>	<i>ESM</i>	<i>Banking union</i>	<i>ECB</i>	<i>Eurobonds</i> ¹
1. Degree of stabilization					
Keeps market interest rates from spiralling					
<i>or</i>					
Offers alternative financing means					
Does not lead to contagion					
2. Degree of moral hazard					
3. Other negative side-effects					

Colours indicate relative scores: red = bad; yellow = mediocre; green = good

¹ With eurobonds, a lot depends on the specific form (see ch. 4). Potentially they however offer great stabilizing properties and create moral hazard.

a. European rescue fund as lender of last resort

In the current set-up of EMU, the role of lender of last resort is played by a European emergency fund for sovereigns (EFSF and ESM). This fund is funded by the euro area governments, which is both its main advantage and its crucial shortcoming (see also table 2).

An emergency fund provides liquidity at a concessional rate. The main shortcoming of an emergency fund as lender of last resort is that it cannot do so unlimitedly (Gros and Giovanini, 2011). Due to their inherently limited size emergency funds like the EFSF and the ESM can never guarantee that cash will always be available. They are therefore not capable of keeping a large number of countries off the market at the same time, and do not offer a fundamental solution to the danger of contagion. In the

current set-up of the emergency funds (with only a small proportion of pre-funding) this is amplified by the fact that one country's (additional) borrowing is another country's (additional) lending (Bijlsma and Valleé, 2012). This increases the risk of contagion, as the next-weakest country has to lend money to the weakest country, and so on. In summary, the degree of market stabilization offered by emergency funds is limited.

Any insurance mechanism causes some degree of moral hazard. The advantage of the current emergency funds is that governments are in a good position to attach conditionality to its support. In this way, moral hazard is limited and recipient countries can be compelled to carry out reforms. This is essential, because the current structure of the euro area does not provide enough other ways of forcing countries to reform. Having said this, it is not always easy to fully enforce the conditionality, as the ultimate sanction – the withdrawal of financial support – would threaten the sustainability of the entire debt and would lead to a crisis that could spread to other EMU member states. As it is unlikely that creditor countries are willing to face these costs, some degree of moral hazard will therefore remain.

b. Banking Union

In the summer of 2012 the EMU embarked on a road towards a banking union. A banking union aims to bring supervision, resolution mechanisms and, possibly at a later stage, deposit guarantee schemes to the European level (DNB, 2013). The creation of a European banking union as proposed at the Euro summit of 29 June 2012 serves to prevent problems with banks or governments from causing a vicious cycle in individual Member States (see section 3 above). If a bank runs into trouble, the European resolution authority will seek to find solutions in which shareholders and, where necessary, creditors are the first to sustain the losses. A resolution fund at the European level, funded *ex ante* by European banks, will further limit the financial risks for European governments. European governments will jointly provide a safety net only as a last resort.

The introduction of a banking union will therefore strengthen the stability of the EMU. It is, however, not enough. In case of a large banking crisis governments will still have to provide a safety net, albeit jointly. Means for this are not unlimited, not even at the European level (basically the same problem as with emergency funds for governments mentioned above). In addition, even if all costs of a banking crisis would be borne by creditors/ shareholders/ an *ex ante* funded resolution fund, a banking union is not enough to prevent the large economic downturn and fiscal deterioration we witnessed during 2009 from occurring (see section 2). Countries could thus still encounter a large fiscal shock and get into liquidity problems. Souring interest rates might still lead to self-fulfilling expectations. A banking union, however meritable, is therefore not enough to stabilize the EMU by itself. In terms of our criteria, it fails to guarantee government access to finance during a liquidity crisis.

c. The central bank as lender of last resort

The institution most capable of guaranteeing market access through bringing down market interest rates is the ECB (Wyplosz, 2011, De Grauwe, 2011b). If the ECB would act as a full-fledged lender of last resort, self-fulfilling solvency crises are ruled out and the risk of contagion is significantly reduced. The ECB therefore has great stabilizing powers in the short run.

A major problem is that the buying of government bonds in principle leads to moral hazard. The ECB after all is not itself in the position to exercise conditionality, unlike governments. This would require the ECB stepping into a (political) minefield that could severely harm its reputation and independence. With the Outright Monetary Transactions programme the ECB partly sidestepped this issue by only considering support for countries that have agreed to an official EFSF/ESM support program, where the conditionality has been set by the relevant institutions. Nevertheless, moral hazard remains a risk: more than with government-funded emergency funds, ECB money seems “free” money. The fact that the ECB has unlimited means also implies that *all* EMU countries know that there is enough money to save them – the flipside of the ECB’s great stabilising powers.

In the longer run, using the OMT comes with a number of negative side effects. The function of lender of last resort could interfere with the ECB’s monetary policy mandate and might create inflationary risks. In addition, ECB intervention also comes with risks specific for a central bank in a currency union. There are good reasons why the “Treaty establishing the European Community” formally forbids the ECB to finance governments directly. Whereas other central banks interact with a single government, the ECB interacts with seventeen. When the ECB buys government bonds this inevitably has distributional consequences. Should the ECB incur losses on its bond portfolio, those losses are transferred to its shareholders – i.e. the euro area member states. The ECB thereby becomes a vehicle for fiscal transfers to countries benefiting from the purchases, for which it does not have the mandate nor the democratic legitimacy.

d. Eurobonds

In the literature also the introduction of Eurobonds has been suggested as a way of stabilizing EMU (De Grauwe 2011a, Boonstra, 2011, amongst others). In this context, Eurobonds are understood as centrally-issued, jointly-guaranteed bonds for financing at least part of the euro area countries’ public debt.

Eurobonds can reduce the risk of overshooting interest rates and contagion by offering EMU countries guaranteed access to financing. If a Eurobond scheme offers participating countries the possibility of fulfilling *all* their financing needs with Eurobonds at reasonable rates, the risk of self-fulfilling debt crises at the national level is even completely ruled out. Potentially, Eurobonds offer great stabilizing

capacity. Note that for this purpose it is not necessary that all government debt is financed with Eurobonds at all times –the possibility of fulfilling all (re)financing needs with Eurobonds suffices.

Eurobonds however also cause moral hazard. Especially if access to Eurobonds is unlimited, countries could lose the incentive to take care of their public finances – they have access to debt financing anyway, based on the guarantee provided by the other EMU countries. To mitigate the moral hazard problem, some proposals therefore limit the access to Eurobonds. In this way, countries remain partially dependent on financial markets and some degree of market discipline is retained. The fact that countries remain partially dependent on financial market has an important flipside: they remain vulnerable to overshooting exchange rates and self-fulfilling expectations. This is especially true if current debt levels are much higher than the threshold for Eurobonds. At the country-level, there thus exists a clear trade-off between stability and moral hazard.

If, however, the problem of moral hazard is not dealt with Eurobonds could not bring stability for the EMU as a whole: deteriorating economic and fiscal fundamentals might cause spiralling interest rates on the joint Eurobond. The same could happen if doubts arise about the guarantees underpinning the Eurobond. This could be the case if every member state only guarantees a certain share of the outstanding Eurobonds, so that not every Eurobond is underpinned by an equally strong guarantee (ELEC, 2012). If in this scenario the creditworthiness of one or more EMU member states is questioned, doubts might arise about the safety of Eurobonds in general. To prevent this from occurring, the most fundamental solution is for every country to guarantee all Eurobonds – i.e. joint and several guarantees.

If moral hazard is credibly dealt with and the guarantee structure is solid, speculation against the joint Eurobond is unlikely. The sheer size of EMU and (in part depending on the type of Eurobond setup chosen) the Eurobond market make speculation against EMU far more difficult than speculation against any individual member state. In addition, the euro area as a whole has its own currency with a floating exchange rate. If Eurobonds would become less popular, this would push the exchange rate down, helping the euro area's economy and public finances to recover. Nevertheless, it does not follow automatically that a self-fulfilling sovereign debt crisis in the euro area as a whole is completely impossible. Theoretically, even in a large (Eurobond) market, with a floating currency and with sound fundamentals, a liquidity crisis which translates into a solvency crisis remains possible. It is, however, far less likely than in individual countries⁷.

⁷ Only if the ECB would act as (implicit) lender of last resort, Eurobonds would be a truly safe asset. Buying Eurobonds might potentially be less problematic for the ECB than buying sovereign debt paper of the various euro area member states, as this does not have distributional effects. It is however outside the scope of this paper to delve into this further.

In summary, we posit that whereas other backstop mechanisms suffer from inherent flaws, Eurobonds might have the potential to durably contribute to a sustainable EMU if the right balance can be struck between (short run) stability and limiting moral hazard. Moreover, the guarantee structure needs to be solid. The extent to which this is feasible is the topic of the next section.

5. EVALUATION OF EXISTING EUROBOND PROPOSALS: BALANCING STABILIZATION AND MORAL HAZARD

Multiple authors and institutions have come up with different Eurobond proposals. Some proposals (ELEC, 2011, Sachverständigenrat, 2011) are explicitly designed as a temporary crisis mechanism. Useful as they might be, those proposals do not contribute to the long-run stability of EMU and are therefore outside the scope of this paper. In the following, we will instead group the most well-known proposals for permanent Eurobonds and attempt to discover to what extent any of these proposals meets the conditions lined out in section 4. In doing this, we will focus on the trade-off between providing unlimited access to finance (and thereby short-term stability) and moral hazard. A more general overview of the different proposals can be found in Claessens et al. (2012).

Table 3 - Eurobond score board (see text)

	<i>Full Eurobonds</i> ¹	<i>Blue Bonds</i> ²	<i>Euro bills</i> ³	<i>EC approach</i> ³ ⁴	<i>ESBies</i> ⁵	<i>This paper</i> ⁶
1. Degree of stabilization						
Keeps market interest rates from spiralling						
or						
Offers alternative financing means						
Does not lead to contagion						
2. Degree of moral hazard						
3. Other negative side-effects						

Colours indicate relative scores: red = bad; yellow = mediocre; green = good

¹Boonstra (2011); EC (2011) approach 2

²Delpla and von Weizsäcker (2011)

³Hellwig and Philippon (2011)

⁴EC (2011)

⁵Brunnermeier et al. (2011)

⁶See the comprehensive approach outlined in section 5 of this paper

a. Full Eurobonds

The most controversial solution to the euro area's current troubles would perhaps be to fully centralize debt issuance in the euro area: all member states from now on finance their entire debt with Eurobonds, issued by a European debt agency. The first proposal along these lines has been made by

Boonstra (1989, 2005, 2011)⁸. In Boonstra's proposal, a newly established "EMU fund" issues Eurobonds, and lends the funds raised to the participating EMU countries at a premium over the Eurobond rate. The Eurobonds are backed by joint and several guarantees from all EMU member states.

Access to Eurobond financing is potentially unlimited, so that our first criterion is met and individual EMU member states do no longer face the risk of being denied access to finance. Thereby also the risk of contagion between countries is reduced. To impose fiscal discipline and provide benefits to strong as well as weak countries, this proposal allows the interest rate to differ across countries. In earlier versions of his proposal, the interest rate paid by an individual country to the EMU fund depended both on its relative budget deficit and its relative government debt:

$$p_{it} = \alpha(B_{it} - B_{EMU(t)}) + \beta(D_{it} - D_{EMU(t)}) \quad (1)$$

Where p_{it} is the (risk) premium paid by country i in year t , B_{it} is the budget balance in country i in year t , $B_{EMU(t)}$ the average budget balance in the euro area in year t , D_{it} government debt in country i in year t and $D_{EMU(t)}$ the average government debt in the euro area in year t . α and β are parameters to be chosen.

Formula (1) rewards budget discipline but also implies that in case of an idiosyncratic shock hitting one of the euro area member states, its interest rates will increase procyclically. However, this will happen in a relatively gradual way (especially if most emphasis is placed on debt). As access to Eurobonds is unlimited, it is unlikely that this will push a country into default.

In the 2011 version of his proposal, Boonstra acknowledged it would be difficult for the EMU fund to break even by exactly matching interest rate discounts- and surcharges. He therefore proposed to drop the possibility of interest discounts, so that countries either pay the base rate or a surcharge. This makes it less attractive for the stronger countries to participate. The surcharges are however saved in an insurance fund, to be used to pay back investors in case an EMU-countries defaults. In EC (2011) a similar proposal to Boonstra's is presented, but without any interest rate differentiation. This makes it easier to implement, but further increases moral hazard. Governance reforms (a.o. a more strict Stability and Growth pact) should counter this, but are not specified.

⁸ Under the heading "approach 1", the European Commission (2011) presents a similar proposal in its Green Paper, though without differentiating interest rates between countries. Instead, it argues for significant reforms of the EU governance structure to prevent moral hazard.

Whereas the proposals for full-scale Eurobonds fulfil all our requirements in terms of risk-sharing (see table 3), the EC proposal (*ceteris paribus*) leads to major moral hazard problems. In Boonstra's proposal, it is highly questionable if a penalty interest rate alone is enough to prevent moral hazard - especially if at the same time access to Eurobond funding is guaranteed and unlimited. In theory, a country could simply issue additional (Eurobond) debt to pay for the higher interest rate and continue its unsustainable fiscal policies. Moreover, there is also the risk of a high administrative burden and painful political discussions on the fairness of higher interest rates for certain countries. Market interest rates after all not only depend on debt and deficit, but also on economic fundamentals.

b. Eurobonds restricted to a certain share of GDP

By restricting access to Eurobonds to a certain share of GDP, some degree of market discipline can be retained. This is the idea behind the well-known "blue bond proposal" by Delpla and von Weizsäcker⁹, who claim that their proposal will even *increase* market discipline compared to a situation without Eurobonds. In their proposal, up to a certain share of GDP euro area member states are allowed to issue sovereign debt up to a joint-and-severally guaranteed "blue bonds" which enjoy seniority over national "red" debt. The exact annual allocation of blue bonds would be proposed by an independent Stability Council, with 60% of GDP as a maximum.

All debt beyond the 60% threshold consists of "red bonds" with junior status issued by the euro area member states themselves. Red bonds could never be guaranteed by another country and could not be bailed out by EU rescue mechanisms (EFSF, EFSM or ESM).

As the red bonds will be explicitly junior and the market for red bonds will be considerably less liquid than the current market for sovereign bonds, yields on red bonds will be high and potentially volatile. Delpla and von Weizsäcker claim that this would lead to high marginal costs for new (>60% of GDP) debt while the average costs (blue + red bonds) will go down. This might be the case when countries existing debt is close to 60% of GDP, but given the current starting position the introduction of blue bonds would push many countries out of the market (Kopf, 2011). Moreover, the dependence on market financing for debt above 60% of GDP also implies that even countries with a solid starting position can still get into trouble following a large adverse shock. The illiquid (or even non-existing) red bond market for countries with a debt around 60% of GDP might make it nearly impossible for them to raise a significant amount of money from the markets at short notice. While retaining (even amplifying) market discipline, the blue-bond proposal therefore does not do enough to stabilize EMU, especially not given the currently high levels of government debt in the euro area.

⁹ This proposal is also known as "approach 2" of the EC's (2011) Green Paper on Stability Bonds.

c. Eurobonds restricted to certain maturities

Another popular option to limit the moral hazard associated with the introduction of Eurobonds is to limit common debt financing to certain maturities. Hellwig and Philippon (2011) propose to introduce joint-and-severally guaranteed “Eurobills”, common debt with a maturity of less than a year. The Eurobills will be issued by a common debt agency, which will be the sole issuer of short-term bills in the euro area. Countries cannot have more than 10% of GDP in eurobills at any given point in time.

According to Hellwig and Philippon, the short maturities make Eurobills more credibly senior than longer-term Eurobonds. The use of short maturities also implies that the common debt has to be rolled over regularly, making it easier to use Eurobills as an instrument to enforce fiscal discipline.

The introduction of Eurobills might, to some extent, help countries retain market access. As argued by the authors, it might also create a “safe asset” for the financial sector. There seem to be few negative side effects. However, as the access to Eurobills is very limited (max 10% of GDP) the proposal does not guarantee EMU member states access to finance in times of stress. Judged by our criteria, the proposal is therefore too limited in size and scope to stabilize EMU (see table 3).

d. Eurobonds with limited guarantees

As argued, to stabilize EMU Eurobonds in our view in principle require joint and several guarantees. Several proposals try to work round this (heavy) requirement, mainly to make it less controversial to introduce Eurobonds. In its Green Paper on “Stability Bonds”, the European Commission (EC) for instance presents a version of the blue-red bond proposal based on pro rata guarantees (“approach 3” in the paper): Each euro area member state would be able to finance part of its debt (max. 60% of GDP) with Eurobonds and would only be liable for its share of liabilities according to a specific contribution key. The EC acknowledges that this would imply that the credit rating of this type of Eurobond would at best be equal to the weighted average of the EMU member states (and possibly even equal to the rating of the lowest-rated member state) and suggests the use of credit enhancements. Those could take the form of collateral (e.g. future tax revenues) or senior status for the Eurobonds. Even though this might somewhat improve the Eurobonds’ credit rating, this rating would remain vulnerable to changes in the rating of individual EMU member states. Yields on this type of Eurobonds could be high, making it unattractive for strong countries.

Apart from the problems with the guarantee structure, this proposal is similar to the blue-bond proposal. The earmarking of future tax revenues might make independent market access (needed for debt above 60% of GDP) for EMU members under stress even more than difficult than in this proposal. It is therefore even more unlikely that this form of Eurobonds would stabilize EMU.

Brunnermeier et al. (2011) present a type of “Eurobonds” proposal without the use of cross-country guarantees. In their proposal, a European debt agency would buy national sovereign debt on the secondary market, up to 60% of each EMU member’s GDP. In exchange, the agency would issue two securities. The first security, the so-called “European Safe Bond” (ESBies), would get a senior status and would serve as safe asset for the financial sector. The second security would get a junior status and serve as shock-absorber. Given the current aversion to risk, it remains to be seen what market there is for such a high-risk security.

The ESBies proposal’s focus is mainly on creating a safe asset, which (though a useful side-effect) is not the focus of this paper. The proposal would also stabilize debt markets to some extent, as countries know there will in principle always be a buyer for the first 60% of GDP of their debt. The limit of 60% of GDP creates similar problems as in the Blue Bond proposal. Countries remain dependent on financial markets, that will become less liquid as a large share of sovereign bonds will be held by the European debt agency (and only be sold as tranching securities).

6. FILLING THE GAPS IN EXISTING EUROBOND PROPOSALS

Compared to the existing proposals discussed above, we believe that a better position along the trade-off between stability and fiscal discipline is possible by using Eurobonds themselves as an instrument to enforce discipline. In the following, we will argue that when designed in the right way, access to Eurobond financing can become the credible carrot (and stick, if necessary) needed to enforce fiscal rules in the euro area. For this purpose, it is essential to see the introduction of Eurobonds in conjunction with the strengthening of European budgetary- and macro-economic oversight. In the following we will outline our proposal¹⁰, which combines a complete centralization of debt issuance in the euro area with the creation of an independent budgetary authority and a ban on countries entering the capital and money markets on their own initiative. Countries can only enter the Eurobond scheme if their debt level has dropped to below 60% of GDP. Our proposal is therefore not a short-run solution and can only be seen as the capstone of EMU.

1. A complete centralization of debt issuance

As argued in sections 3 and 4, only a complete centralization of debt issuance is capable of truly stabilizing EMU. Combinations of jointly-issued bonds with junior national debt (as in the Blue Bonds

¹⁰ A first version of which has been presented in DNB (2011). See also De Haan et al. (2012, 2013). Torgersen (2012) to some extent resembles our proposal, but differs in keeping the Council in charge of enforcing fiscal discipline.

proposal) enhance market discipline, but increasing the share of senior debt and making markets for sovereign bonds less liquid would make market access even more difficult in times of stress (Steinkamp and Westermann, 2012). Although the complete centralization of debt issuance leads to the elimination of market discipline, financial markets arguably do not have a very good track record in enhancing fiscal discipline (see section 3).

Though in our proposal all debt would be fully mutualized, access to Eurobonds is not unrestricted. In principle, debt in each country would be limited to at most 60% of GDP, in line with Treaty obligations (see paragraph 4 of this section). This ensures that even if the budgetary situation deteriorated severely, the chance is small that the mutual guarantees would be invoked. A low level of debt also means that if the guarantees do have to be invoked, it is credible that the other countries can absorb the additional burden.

2. A ban on countries entering the capital and money markets on their own initiative

The complete centralization of debt issuance should be combined with an explicit ban on countries entering the capital and money markets on their own initiative. This makes EMU member states fully dependent on Eurobond financing, giving the issuer of the Eurobonds (see point 4) significant bargaining power over the member states in enforcing fiscal discipline.

3. An independent budgetary authority that controls the access to Eurobonds

In a monetary union there is a strong case for some degree of budgetary oversight. Besides fostering time-consistent fiscal policy within member states, budgetary oversight serves to improve policy coordination within countries and limit negative externalities (Annett et al., 2005).

The current rule-based fiscal framework (the so-called Stability- and Growth pact) has not been very effective in fostering fiscal discipline (De Haan et al, 2004). Enforcement mechanisms proved weak and politicised and there was too much focus on *correcting* rather than *preventing* fiscal imbalances. Debt levels were almost ignored completely. Moreover, too little attention was paid to the built-up of macro-economic imbalances and the effects thereof on public finances (Gilbert and Hessel, 2012).

Recent changes, in the form of the so-called “six-pack”, “two-pack” and “fiscal compact” reflect important improvements (De Haan et al., 2012a). Nevertheless, several weaknesses remain. Enforcement ultimately remains in the hands of the European ministers of Finance (united in the Ecofin council), who have proven “not to have the collective capacity” needed to commit to impartial and consistent enforcement of the rules (Buiter, 2003). Moreover, the only possible sanction remains a financial fine. The credibility of fines in the corrective part of the SGP is limited by the fact that, when imposed, they aggravate the fiscal problem they are supposed to address.

The elimination of market discipline (however imperfect) implied by the introduction of our version of Eurobonds, together with the moral hazard caused by the joint and several guarantees increases the need for a considerable further strengthening of budgetary oversight. The introduction of Eurobonds therefore needs to go hand-in-hand with the introduction of an impartial (budgetary) supervisor and credible penalties. We propose the introduction of an independent budgetary authority in charge of both enforcing fiscal discipline as well as the issuance of Eurobonds (De Haan et al, 2012b). The authority should be able to increasingly intervene in the fiscal policy of countries that break the agreements; especially in countries which exceed the maximum debt level of 60% of GDP. Such an authority should also pay attention to the build-up of macro-economic imbalances and the structural growth capacity of euro area countries. For European countries, the introduction of an independent budgetary authority is not as controversial as it may seem (Wyplosz, 2012). EMU Member States have already agreed to give up an important part of their budgetary autonomy in 1992, when signing the Treaty of Maastricht. Our proposal would mainly make these existing restrictions more binding.

In the fiscal framework, much more attention will be given to the level of government debt (see point 1). Access to Eurobonds will in principle be limited to a “debt ceiling” of 60% of GDP. Countries that need to take on additional debt are only allowed so temporarily and under the strict condition that they adhere to a budgetary correction programme, similar to the IMF/ EFSF programmes currently in place in several European countries. Any country that fails to satisfy the requirements (unless caused by events beyond its control) would be denied access to additional finance and would therefore have no choice but to immediately take further austerity measures.

In our proposal, this ultimate sanction can be more credibly imposed than at present¹¹, because i) countries can only access financing through the authority, ii) the (re)financing of the existing debt is not at stake and iii) all other countries still have access to Eurobond financing. Especially the latter two points stand in stark contrast to the current practice of providing financing through a (European) rescue fund. At the moment, the ultimate sanction is to stop providing loans. This would force the country in question to (re)finance both its budget deficit and its existing debt on the capital markets and would most likely push it into default. This is costly, not only for the country in question but also for the other euro area countries. This could lead to contagion and (re)financing troubles in other EMU member states. In the case of Eurobonds, new financing to the country in question can be stopped while still rolling over existing debt. In addition, all other EMU countries still have a secure funding

¹¹ For this sanction to be fully credible, banking support- and resolution also needs to take place at the European level. Otherwise, limiting a country's access to finance could potentially cause a run on its financial sector, out of fears that the government can no longer serve as a credible backstop. A European banking resolution fund is already in the making.

source: Eurobonds. This makes the imposition of the sanction much less costly, and therefore much more credible. Eurobonds, therefore make for an excellent enforcement mechanism. In the right set-up, including a politically independent budgetary authority, this largely counters the moral hazard associated with their own introduction.

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