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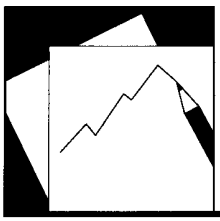

IMF Working Paper

Paths to Eurobonds

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Paths to Eurobonds

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Abstract

This paper discusses proposals for common euro area sovereign securities. Such instruments can potentially serve two functions: in the short-term, stabilize financial markets and banks and, in the medium-term, help improve the euro area economic governance framework through enhanced fiscal discipline and risk-sharing. Many questions remain on whether financial instruments can ever accomplish such goals without bold institutional and political decisions, and, whether, in the absence of such decisions, they can create new distortions. The proposals discussed are also not necessarily competing substitutes; rather, they can be complements to be sequenced along alternative paths that possibly culminate in a fully-fledged Eurobond. The specific path chosen by policymakers should allow for learning and secure the necessary evolution of institutional infrastructures and political safeguards.

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I. INTRODUCTION

The European Monetary Union was purposefully designed as a monetary union without a fiscal union. History has not been kind to such arrangements, as Bordo et al. (2011) argue and as several critics had warned before the eurozone came into being (for a review of that earlier literature, see Bornhorst, Mody, and Ohnsorge, forthcoming). The ongoing crisis appears to have validated these concerns. The absence of formal pooling of resources has required the construction of additional arrangements for inter-governmental fiscal support to respond to countries in crisis. These arrangements include the European Financial Stability Facility (EFSF) and the European Stability Mechanism (ESM). And as the crisis has evolved, the European Central Bank (the ECB) has needed to play an important role in supporting banks and, indirectly, sovereigns in need.

In this context, the common issuance of debt in the euro area has been increasingly evoked—including most recently by the European Parliament and the European Council—both as an immediate response to the financial crisis and as a structural feature of the monetary union.

This paper is a review of various proposals for common debt issuance. Clearly, common instruments are not the only or necessarily the primary way to reduce financial instability or improve economic, financial and fiscal governance in the euro area. Indeed, common debt issuance is inextricably linked to the shape and form of a future fiscal union. Because a fiscal (and banking) union is likely a longer-term project, a discussion of common instruments today can help sharpen the discussion of the choices underlying a fiscal union and possibly initiate more limited forms of risk-sharing and pooling that create a valuable learning process.

In undertaking this review, we are motivated by the following questions:

- How does the proposal change incentives of governments (debtors) and creditors? Does it offer clarity on how average and marginal costs of borrowing would be affected, and how default would be treated?

- What is the nature of the insurance that is being offered? Would the new instrument help reduce risk and improve liquidity? Who will want to hold those instruments?

- Would the (currently perverse) sovereign-bank linkages be reduced? What are effects on current financial markets (ill)functioning?

- What are the phasing-in, transitional, legal, and institutional issues?

- And, are there paths along which the different proposed instruments may be combined?

In the next section, we provide a framework of objectives to guide the thinking about proposals. This is followed by sections that provide a summary and then a comparative analysis of five proposals: Bruegel's Blue-Red bond; the Euro-nomics group ESBies; the German Economic Experts' European Debt Redemption Fund; Thomas Philippon and Christian Hellwig's Eurobills; and those options summarized in the EC Green Paper for discussion of November 2011.[2] Next, we suggest two possible paths along which some of the proposals could be introduced. A final section offers some concluding reflections.

II. OBJECTIVES AND MOTIVATIONS

The common issuance of debt could serve a number of different purposes. From the perspective of a sovereign debtor, common debt needs to provide incentives to prudence but also insurance against interest and liquidity shocks that can threaten debt sustainability. From the perspective of creditors, the construct needs to improve stability, liquidity and reduce the probability of default. The debate today, however, is not motivated mainly by such longer-term concerns of incentives and adequate fiscal risk-sharing mechanisms, but also by the urgency to stabilize financial markets, lower credit risk premiums, and eventually improve the outlook of debt dynamics of countries.

Table 1 therefore suggests that the objectives fall into three broad categories: (i) fiscal risk-sharing and fiscal discipline; (ii) financial stability; and (iii) monetary policy transmission mechanism and financial markets' functioning in the eurozone. There are evident overlaps as well as conflicts between these objectives. A test for the proposals is how they help—by themselves or in combination with other initiatives—in balancing these objectives.

Fiscal risk-sharing and discipline

In practice, fiscal unions have three facets: (a) frameworks for discipline (fiscal rules or other institutional tools), (b) risk-sharing mechanisms to help macroeconomic management (discretionary and automatic stabilizers) and (c) some degree of income equalization to correct more permanent differences in initial conditions or endowments. The distinction between risk-sharing against idiosyncratic economic shocks and income equalization features is intellectually clear but extremely challenging in practice. In fact, Sachs and Sala-i-Martin (1991) showed for the case of the US how apparently cyclical asymmetric shocks result in transfers of a quasi-permanent nature. Common debt issuance has risk-sharing features as it can provide some *ex ante* transfers through lower spreads for some sovereigns. And *ex post* transfers would occur where one of the member countries is not able to meet its obligations.

[2] The idea of project bonds has been widely discussed and often tied to the debate on common debt issuance but we have decided not to include it in our overview for we do not consider it to be real mechanism of debt mutualization of a budgetary nature. In its scope and size, it is too limited to be a meaningful contributor to financial stability and fiscal risk-sharing.

Table 1: Objectives of Common Debt Issuance

Fiscal risk-sharing and fiscal discipline	
Fiscal risk-sharing	- monetary union requires some fiscal risk-sharing. This can be achieved through common debt in the form of ex-ante (borrowing cost and transfers) or ex-post (default) mechanisms - issuing debt jointly can reduce borrowing costs for currently stressed sovereigns, with gains at aggregate level
Fiscal discipline	- current methods of fiscal discipline have shown limits; common debt issuance with enhanced institutions and ex ante surveillance, and a better role for price signals could strengthen fiscal discipline
Financial stability	
Bank-sovereign loop	- home bias in sovereign debt holdings (that liquidity support measures (e.g., LTRO) may have increased) makes for perverse bank-sovereign links; common asset/pooling risks can reduce it
Provision of a safe asset	- when risk (perceptions) change, flight to quality leads to large, destabilizing changes in yields and capital movements; a large common safe asset can reduce these risks - with larger asset and better reserve currency, liquidity benefits can accrue to euro area and possibly help with global imbalances
Monetary policy transmission and financial markets' functioning	
Monetary transmission mechanism	-monetary policy transmission mechanisms are impaired; a unified bill/bond market can help restore them
Financial markets functioning	- financial markets are increasingly fragmented along national lines; a reduction in country risks and common bill/bond markets can help revive the benefits of financial integration

Yet, the possibility of transfers raises questions about moral hazard and the viability of any common debt proposal crucially depends on the ability to reduce and control it. The stronger the safety net and the larger the transfers, the greater is the concern that some countries may free ride. Common debt issuance thus requires powerful mechanisms to enforce fiscal discipline in a time-consistent manner. The design of the instruments can help provide price signals for the (marginal) borrowing cost to a sovereign but one also has to recognize that markets are prone to swings and excesses.[3] Other mechanisms that rely on collegial rules and

[3] See Delors (1989): "experience suggests that market perceptions do not necessarily provide strong and compelling signals and that access to a large capital market may for some time even facilitate the financing of economic imbalances. Rather than leading to a gradual adaptation of borrowing costs, market views about the creditworthiness of official borrowers tend to change abruptly and result in the closure of access to market financing. The constraints imposed by market forces might either be too slow and weak or too sudden and disruptive."

ex-post sanctions could be less effective, as experience with the Stability and Growth Pact (SGP) shows. In this regard, the new institutional features of the European economic governance (Six Pack, Two Pack, and Fiscal compact) do enhance incentives for fiscal discipline. But the challenge is to complement fiscal rules affecting quantities most productively with market-based mechanisms using price signals.

Financial Stability

Common issuance of debt could make an important contribution to financial stability through two mechanisms. First, the links between banks and their respective national sovereign could be weakened. Banks (and other financial institutions) typically hold significant amounts of their respective government bonds as they are regarded as safe (and liquid) assets, or at least were so before the crisis. This "home bias" in sovereign bond holdings creates perverse feedback loops when concerns about sovereign risks translate into concerns about banks.[4] And banks rely on a public safety net which is nationally funded, either explicitly (as in deposit insurance) or implicitly (in the form of guarantees and recapitalizations). In the absence of a common safety net (e.g., common deposit insurance, funding for recapitalization, all accompanied by common regulations and supervision, and centralized resolution authority), concerns about banks' risks translate into concerns about the sovereign.

In some countries, the weakness of the sovereign is currently also affecting banks' ability to fund themselves and intermediate credit. In turn, this adversely affects the sovereign since the real economy is weakened and fiscal positions are undermined, and as the sovereign's contingent liability vis-à-vis the banking system increases (Mody and Sandri, 2012). One objective of some proposals is thus to create a safe common asset, which is relatively insulated from an individual country's banking sector and sovereign risks.

The second financial stability mechanism could work by increasing the supply of safe assets. This could reduce the risk of a flight to quality (or safety), where small shocks, including changes in ratings, drive large wedges in yields between (perceived to be) risky and safe sovereigns, and lead to large cross-border capital flows. As investors migrate funds to (perceived) safer jurisdiction and/or assets, these flights to safety create funding challenges for banks and other financial institutions. With debts pooled in sufficient amounts or made different than the debts of the national sovereigns, these risks can be reduced. A large safe asset can also reduce the need for extraordinary liquidity provision from the ECB.

Common euro debt arguably provides other benefits. These could come in the form of a liquidity premium from a large safe asset, help manage international investment positions, and gain more of the advantages of a reserve currency, now largely captured by the U.S. dollar. Over time, a greater supply of safe assets from Europe could then contribute to stabilize the international monetary system, and perhaps help reduce global imbalances (see

[4] As Angeloni and Wolff (2012) and others have shown, there is a high correlation between the nationality of the banks (and its location) and the nationality of the government claims it holds. And this correlation has increased since the crisis began, possibly in part due to ECB liquidity support measures, such as the Long-Term Refinancing Operations (LTRO).

Angeloni et al, 2011). As such, a pooling or common issuance of sovereign debt can help improve financial stability at the European and global level.

Monetary policy transmission and financial markets functioning

The normal monetary policy transmission channels in the euro zone are currently disrupted since there are large market segmentations and fragmentations along national lines across the credit spectrum. Depending on where they are located, borrowers face different interest rates and even credit rationing. This means that interest rate policy set centrally by the ECB does not translate adequately into (changes in) local lending and funding conditions. These differences are in large part due to concerns about the health of national banking systems, in turn related to the health of the sovereign. The ECB has embarked on a wide range of non-conventional policies over the last few years to restore the proper functioning of financial markets so as to allow for a proper transmission of monetary policy. But these actions have, however, for the most part, only minimized the most adverse consequences of shocks and averted liquidity crises and systemic banking failures, but not brought financial conditions back to normal.

Commonly issued debt could contribute to restoring financial markets' functioning and monetary policy transmission by providing for a unified and deep market for euro sovereign securities. In addition, having one such asset could allow the ECB to embark on quantitative easing, if and when needed, without concerns for the distributional effects or consequences for its balance sheet.

III. SUMMARY OF THE PROPOSALS REVIEWED

The discussion of common euro debt started soon after the introduction of the euro, when in 2000 the Giovannini Group (2000) recommended increased coordination of public debt issuance with a final objective of joint issuance. This call was echoed by the European Primary Dealers Association (2008, 2009) and often discussed among national debt management offices. Common euro debt was thought to offer an alternative safe-haven to US Treasuries and reinforce the role of the euro as a reserve currency. Proposals consequently stressed that common debt would help reap a liquidity premia, possibly leading to lower borrowing costs for all issuers.

With the crisis, common debt became quickly seen as a possible crisis resolution tool. As early as May 2009, De Grauwe and Moesen (2009) suggested common debt to avoid diverging borrowing costs, with adverse consequences for debt sustainability and risks of propagation. Gros and Micossi (2009) followed with a proposal to leverage borrowing for joint European fiscal stimulus. Both proposals got limited traction but probably inspired the design of the EFSF launched in May 2010. As the crisis deepened and measures put in place showed limits, new proposals have emerged. These stressed how common debt could help with both short-term challenges related to the crisis and more medium-term objectives related to the architecture of the monetary union. Of these, we include, and review in the next

section, the following most important five (see Appendix I for more details; Bijlsma and Vallée, 2012, provide a discussion of related euro area safety nets).[5]

In May 2010, Delpla and Von Weizsäcker issued their "Blue-Red bond" proposal, which has subsequently been augmented. It involves the mutualization of the debt of each member state equal to 60% of GDP—called Blue bonds—with the remainder—Red bonds—still to be issued on a national basis. This split and the joint and several guarantees are designed to insulate banks from national sovereign risks, lower borrowing costs for some sovereigns, and reduce flight to safety. Any residual borrowing (i.e., above the 60% of GDP threshold) would be through the Red bond, which is explicitly junior and hence at a (marginal) cost reflecting the country's own creditworthiness, thus maintaining price signals and fiscal discipline incentives. Since then, the proposal has been amended to clarify that the transition would be gradual, with guarantees and common bond financing phased in over a period of 3-4 years.

Starting October 2011, the euro-nomics group—an informal group of economists—has suggested using financial engineering to create a form of common safe debt by pooling and tranching a balanced portfolio of eurozone sovereign debts. The so-called European Safe Bond (ESBies) would be the senior tranche and EJB the junior tranche of this structure. It would serve two purposes: first, banks holding ESBies would no longer be exposed to national sovereign risks, but to combined eurozone risk; and second, any flight to safety would be from the EJBs, the junior (risky) bond, to the ESBies and not, as now, from one country to another, thus reducing a source of multiple equilibriums and instability. Because the core of the proposal requires no sovereign guarantees, it faces limited hurdles to implementation, yet it can also be easily reversed.

In November 2011, the German Council of Economic Experts proposed an alternative, in many ways the converse of the Blue-Red proposal. The so called Redemption Pact would transfer the debt of a member state in excess of 60% of GDP (if any) into a European Debt Redemption Fund (ERF) for which all members would be jointly and severally liable. The total debt covered would amount to some 27% of eurozone GDP, with Germany, Italy, and Spain the largest participants. In return, countries would agree to repay ERF the transferred debts within some 25 years, with these obligations senior to remaining national debts and possibly backed up by collateral and dedicated tax revenues from each country. During a roll-in phase of 3 to 4 years, participating countries would, by transferring obligations coming due up to their issued quota of guaranteed debt, be able to meet much of financing

[5] A number of other proposals exist. In 2010, the EC proposed "project bonds," essentially joint and several bonds, to finance pan European projects and leverage the borrowing capacity of the EU budget. Political agreement now exists to introduce these bonds on a pilot basis summer 2012. As the EC itself accepts, however, project bonds are very different from common debt and can neither address current financial instability or the more fundamental deficiencies of the monetary union. Fonseca and Santa Clara (2012) propose that the discount Germany obtains because of the flight to safety be redistributed to countries that borrow today at higher interest rates. Such lump-sum transfers would not involve guarantees whatsoever, leaving defaults and restructuring still possible, but would offset the higher costs paid by weaker debtors. Somewhat similar, Cline (2012) proposes a mechanism where countries would contribute to a fund that effectively insures against market credit risk with strong countries providing backing. Erber (2012) suggests to reduce moral hazard risks through "conditional eurobonds" where only a small group of AAA-rated countries would have access to common debt.

requirements. Any other debt would remain of national responsibility and be junior. The authors suggest that the design overcomes European legal barriers to implementation.

Also in November 2011, Hellwig and Philippon proposed a variant to the Blue-Red proposal limited to short-term common debt (i.e., Eurobills), envisioned to be about 10% of GDP. The proposal pools all short-term borrowings, backed up by joint and several guarantees, and thus allows (some) member states to borrow some amounts at lower interest rates—thereby improving their debt sustainability dynamics, while at the same time providing a safe asset to banks—thereby reducing financial stress. The short maturity has the benefit of imposing some continuous discipline (as guarantees need not be renewed). And while the proposal is easily scalable to longer-term claims, it also has a built-in exit mechanism (as claims with guarantees can be rolled off). Because of its more limited nature, the proposal is thought to more easily comply with European and national legal constraints.

The EC issued a Green paper on November 23, 2011 on the feasibility of introducing so-called stability bonds. The three options listed largely built on existing proposals and range from complete substitution of national debt by common bonds issued under a joint and several framework, to issuance of both common and national debts, and to a more modest option of bonds with just several guarantees. Depending on the option chosen, changes to institutions, including EU-Treaties and financial markets, would be needed to minimize risks, especially moral hazard, ensure budgetary discipline, and keep costs low.

IV. ASSESSMENT OF THE PROPOSALS

Based on the objectives laid out in section II, we analyze the proposals from the perspective of debtors, creditors, and the transitional needs of the proposals.[6] The comparison of the proposals along these dimensions sets up the discussion on possible paths in section V.

A. Countries' Incentives

The various schemes can alter country's incentives in two ways: first, individual countries can benefit from issuing debt that is, at least in part, underwritten by other, stronger countries, which in turn raises issues of fiscal discipline and moral hazard; and, second, debt seniority structures are altered, creating differences between marginal and average cost of borrowings, with associated differences in restructuring probabilities. Table 2 summarizes and offers a guide to the discussion below along these dimensions.

Use of guarantees. A crucial economic dimension from the borrower's incentive point of view is whether the proposal relies on intergovernmental guarantees and the scope of such guarantees. This determines in large part whether the scheme reduces the borrowing costs for a specific country, and thus determines the distributional effects across countries (ex-ante or ex-post). It also determines the risk of moral hazard and thus whether (stronger) forms of fiscal and market discipline are needed. One model is that of "*joint and several*"

[6] For other evaluations, see Association of Financial Markets (2012), Carstensen (2011), Favero and Missale (2010, 2012), European League for Economic Co-operation (2011), and Tirole (2012).

intergovernmental guarantees, where sovereigns that participate in the scheme are all individually responsible for full repayment, even when one or more sovereigns cannot repay. Depending also on amounts covered, this creates relatively open-ended commitments and risks for the sovereigns involved. Another model is that of "*several*" guarantees, where one or more sovereigns guarantee a certain part or amount of another sovereign claims, but where the total liability of each sovereign is limited. For example, the current EFSF bonds are guaranteed by various governments up to specific amounts (or shares) and the guarantees are therefore simply "*several*" but not "*joint*". Regardless, the legal mechanisms used to enforce guarantees in each of the national states would have to be closely scrutinized.

Table 2: Country Incentives

	Euro-bills	**Blue-Red Bonds**	**Stability Bonds**	**Redemption Pact**	**ESBies**
Guarantees	JS	Blue: JS Red: No	JS + S	JS	No
Amounts of guarantees on issuance	≈10% of GDP	Up to 60% of GDP	No	Over 60% of GDP (about 27% of €-GDP)	Up to 60% of GDP
Tranching and pooling	No tranching. Pooling	Tranching and pooling	Depending on option	Tranching and some pooling	Pooling
Rule based fiscal discipline	Yes, through limitation of quota	"SGP 2.0," FC, 2P, 6P, debt brakes, some enforcement through earmarking and collateral			Not needed
Market based fiscal discipline	Price signals on rest of debt	Price signals on red debt	No explicit, but depends on option	Price signals on other debt	Not sought or needed
Fiscal coordination	Not necessarily	Committee, allocates Blue bonds, some common taxes	Depends. Some coordination, some fiscal union	Much coordination, some fiscal union	Not necessary
Restructuring	Not envisioned	Red bonds yes, link to ESM; Blue bonds not	Not discussed. CACs similar to current	Not envisioned. CACs similar to current	At country level, EJBs to absorb loss, link to ESM

Notes: JS stands for Joint and Several; S stands for Several; "SGP 2.0" stands for an enhanced Stability and Growth Pact; FC stands for Fiscal Compact; 2P stands for Two Pack; 6P stands for Six Pack; the fiscal rules are to some degree complementary and overlapping; ;CAC stands for Collective Action Clause.

The Eurobills, Blue-bonds, and Redemption bonds involve joint and several guarantees; the EC Green Paper has two options with joint and several and one with several; and the ESBies do not require any intergovernmental guarantees (but some credit enhancements with paid in capital could be used). In terms of amounts, the Eurobills' guarantees are limited, up to about

10% of GDP;[7] the Blue-bonds and Redemption bonds relatively large, respectively up to 60% of GDP or all debts over 60% of GDP (some 2.3 trillion euro or 27% of euro area GDP);[8] and the EU Green Paper amounts vary, depending on the option. These differences mean that the Blue-Red proposal has likely the most impact on the cost of borrowing, followed by the Redemption Pact, and then the Eurobills.

Use of tranching. Most of the proposals use some form of tranching or seniority structure (the Eurobills proposal relies largely on the de-facto seniority derived from its short maturity).[9] Tranching enhances the safety of the senior instruments and makes the junior tranche more sensitive, which could allow markets to play a greater disciplining role (e.g., for a country with more than 60% of debt to GDP that issues, the Red bonds' prices would be more sensitive to its fiscal conditions). Whether a "Modigliani-Miller proposition" holds, i.e., whether the sum of the value (or risk) of the original instrument is the same as the combined values (or risks) of the tranched instruments, is unclear. Having junior claims could add value if fiscal discipline is improved, but there could also some risks.[10] Analytics and empirics on this are limited, especially for sovereigns, and effects will in part depend on what classes of investors hold which claim, and on how the phase-in and transition are structured.

Need for enhanced fiscal and market discipline. The use and amount of guarantees and the relative (in)effectiveness of market discipline dictate the need for (more) ex-ante fiscal discipline and other moral hazard mitigating measures. All proposals, other than ESBies, call for strengthened fiscal surveillance and most call for more fiscal coordination. The tools proposed to achieve fiscal discipline are largely similar across proposals: essentially combinations of an enhanced Stability and Growth Pact, debt brakes (such as those used in Germany and Switzerland), the new Fiscal Compact, Six Pack and Two Pack.[11] The Redemption Pact also proposes to use collateral in the form of gold reserves of the national

[7] There is some allowance for continued national issuance of short-term debt for cash management purposes, but to avoid adverse selection—stronger countries issuing largely on their own—this would have to be limited.
[8] In principle, the cut-off for the Blue-Red proposal could be less (or more) than 60% depending on countries' debt capacity, but this may be difficult to determine and to apply. A recent variant of the Redemption plan would set the 60% floor on a prospective basis, i.e., instead of a current cutoff, countries' expected debt as of say three years from now above 60% would be mutualized. This would mean that countries with large expected fiscal deficits, but low current debt, like Spain, would have a larger amount of debt mutualized, which would help with near-term financing requirements.
[9] There are many questions on the ranking and seniority treatment of common debt. Would this seniority (vis-à-vis national debt or other (common) debt) just be based on the joint guarantees of other national states or on other legal mechanisms? Would an instrument like the Eurobills purely rely on its short-term maturity to obtain or also on legal mechanisms to support its seniority? Related, what is the legal treatment of issuing entities (e.g., European Debt Agency), which may in turn become bondholder or creditor (e.g., of national debt)?
[10] For example, (exogenous) shocks could get more easily reflected and amplified in the pricing of the junior tranche (e.g., as roll-over risk increases, leading to Calvo (1988) style liquidity problems), which could worsen borrowing conditions, increase bank-sovereign links (if junior tranches are (allowed to be) held by banks), and as a result lead to a "loss in value" and a worse overall outcome.
[11] These and other fiscal rules are to some degree complementary and overlapping (e.g.,, the FC includes the SGP Pact and debt brakes, while the SGP is an element of the Six Pack. And, as with all rules, there are general time-consistency questions, e.g., will they be enforced if a (large) country finds it in its interest to deviate?

central bank and earmarking of fiscal revenues to ensure repayment.[12] The fact that (most) proposals recognize the need for safeguards does not mean, however, that all issues are clear.[13]

Some proposals also add a pricing element to fiscal discipline. Thus, the higher price paid for the Red bond in the Blue-Red proposal potentially creates an incentive to limit debt issuance. The Eurobills proposal also relies on the possibility of being excluded from the ability to roll-over the short-term claim. The Redemption Pact has no added pricing incentives to behave and requires very specific and strict fiscal targets, as participating countries are required to meet the debt target of 60% of GDP at the end of the 25-year period, which implies for some countries significant primary surpluses (and which earmarking can make more binding). Whether fiscal coordination—in the setting of annual budgets, annual allocation of (new) borrowings or otherwise—is needed depends also on the use of guarantees.

Restructuring. An important incentive issue is whether the (new) instruments can be restructured, and if so how. Having seniority and tranching structures implicitly assumes the possibility of (differential) restructuring, but most proposals do not explicitly discuss this, in part as they assume that the new framework makes (senior) debt restructuring less likely. This may not be credible and to be operational, further changes would be needed. In particular, each proposal would need to consider how the possibility of restructuring affects the borrowers' incentives and the creditors' willingness to hold various claims. These restructuring modalities depend in part on the law(s) the instruments will be based on.[14] Ease of restructuring also depends on whether the instruments have embedded Collective Action Clauses (CACs)—while all euro area sovereign debt issues are expected to have CACs by 2013, it isn't clear whether the new, more senior instruments will also have them. There is also the question of how various instruments relate to the ESM. Obviously, the junior claims are assumed to be restructured first (the Blue-Red proposal has specific references to IMF programs and ESM actions that could trigger a Red bond restructuring; and the ESBies proposal sees a role for the ESM in the EJBs).

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[12] Obviously, the exact legal forms of guarantees, how they will be provided (e.g., at a single point time, irrevocable, or annually, with some conditions) and the treatments of collateral will greatly matter for enforcement of any guarantee and mobilization of collateral. For instance, budgetary law may appropriate sums/revenues for destination exclusively to common debt or may more generally identify certain sources of budgetary revenues, with the two models having significant differences. While some proposals suggest a specific tax levied on real estate to service common bonds in case of default, most proposals do not specify this.

[13] Safeguards could involve (annual or general) limits on common debt issuance, limits on fiscal deficits and ceilings on debt accumulation, and other specific (fiscal) incentives (such as penalties). These are not the only or necessary most important possible disciplining features. The Blue-Red bonds proposal envisions that the annual allocation of Blue bonds be proposed by an independent stability council staffed by independent professionals (similar to the Executive Board of the ECB). Other safeguards are possible as well.

[14] Currently, sovereign claims of EU-countries are based on local as well as foreign laws, with the UK law the most often used foreign law. There are large differences among these legal regimes though, including on the ability to restructure bonds (e.g., under UK law restructuring is more difficult), and the corresponding de-facto seniority status of the bonds. A related question is whether a "Eurobond governing law" is needed, so as to have a uniform regime, but so far none of the proposals spell this and other related legal aspects out.

B. Creditors

The various schemes affect creditors in a number of ways: by creating a new, safe(r) more liquid asset**;** and by affecting the (relative) demand for various sovereign claims. These in turn will affect the interest rates expected on the new instruments, and the (relative) pricing of current and new instruments. Table 3 summarizes proposals along some dimensions here.[15]

Safe and liquid asset. The most important creditor dimension is the degree to which a safe asset is created, that has a large stock or volume available, is relatively liquid, and appeals to a large (and possibly additional) investor base. Such an asset could command a liquidity premium, and thereby lower the cost of capital for all, and avoid flights to safety. Guarantees, tranching and pooling are the most important means by which safety is achieved, with diversification the most important for the ESBies.[16]

Table 3: Creditors

	Euro-bills	**Blue-Red Bonds**	**Stability Bonds**	**Redemption Pact**	**ESBies**
Safe and liquid asset	Yes, but small	Yes, and large	Depending on option	Yes, but smaller and temporary	Yes, and relatively large
Main source of safety	Maturity and guarantees	Guarantees, tranching and pooling	Depending on option	Guarantees, tranching and some pooling	Pooling
Investors' base	Commercial banks	Various, but red not by banks	Various	Various	Various, but EBJs not by banks
Regulatory requirements	Incentives, regs to hold as safe assets, e.g., Basel III liquidity rules	Incentive to hold as safe assets, e.g., capital adequacy, solvency, liquidity, accounting (no MTM) like other sovereign claims. Some restrictions (e.g., Red not to be held by banks)			Regulations TBD. EJBs more complex
Price effects	Liquidity premium. Limited/none on secondary prices	Liquidity and flight to safety premiums. New seniority classes could mean large secondary prices changes if phased in fast and an issue at transition points			Some premium. Maintains price signals across yield curves

Notes: MTM stands for mark to market

[15] There are many other monetary policy and financial market questions. Annex 1 summarizes the proposals along some of these other dimensions.

[16] There are obvious limits to diversification to lower overall risk given the high correlations among spreads of different sovereigns in the euro area, especially in times of stress, driven in large part by the endogeneity of risks (e.g., the probability of default by a sovereign conditional on another sovereign defaulting is higher than the unconditional probability). Wagner (2011) actually argues that pooling can increase joint failure risk, worse than a single country default. Nevertheless, and albeit most often not quantified, some diversification gains should still exist in principle as countries face different exposures to real and financial shocks.

The ESBies would have a big and most immediate effect, since they are intended to operate on the existing pool of assets available in the secondary markets and the operation could be large (euro 5.5 trillion). The proposal also has a conservative tranching structure. The Blue-Red bonds have the most to offer in that all countries' debt up to the threshold of 60% is included, pooling many safe claims. It also limits the coexistence of common securities with large amounts of highly-rated national debt (where the latter can remain a destination for flights to safety). The Redemption Pact—with its relatively large size and joint and several guarantees, has also much to offer in terms of creating a safe asset, albeit temporary.[17] The Eurobills being smaller in size and the EC options, depending on which is chosen, would have more intermediary effects. Regardless, the degree to which liquidity, pooling and other gains will be feasible will depend on detailed designs and other aspects. As noted by, among others, Tirole (2012), a common security might still require a "lender-of-last-resort," in the form of the central bank being willing to buy the securities, to allow for a premium.

Who will hold the new asset? The demand for the various instruments relates importantly to the sovereign-bank link. Without breaking this link, demand will remain fragmented and a liquidity premium is unlikely to materialize. And breaking this link is important in its own right (although there may be other ways to achieve it). The ability to reduce this link largely varies with the guarantees and amounts envisioned, and phase-in. In steady state, Blue bonds and ESBies have much to offer here—as they are large (note that Red bonds are not assumed to be held by banks), followed by Redemption bonds (initially relatively large, but declining as countries repay and more composed of claims on high-debt countries), and Eurobills (given its smaller size), with the EC options in between depending on which is chosen.

The investor bases for the various claims will otherwise vary, depending in part on regulations, notably bank liquidity and capital adequacy requirements. For some, such as the Eurobills, demand is more obvious (mainly Eurozone commercial banks, especially when they are required to maintain certain liquidity ratios).[18] For others, such as the EBJs, the investor base is less obvious (except banks should not be allowed to hold them). In terms of (expected) treatment for capital adequacy purposes, the current, Basel II (and EU CRD3) risk weights are quite favorable to sovereign debt (issued within Europe), but may be revised upwards. Instruments such as Blue bonds may then appeal to banks when treated favorably. Requiring higher risk weights for some instruments (e.g., Red bonds and EJBs) will also help reinforce that these are junior claims. Rules for insurance companies (e.g., Solvency II) and pension funds will also matter since these institutions invest significantly in sovereign debt.

Effects on costs. Predicting the attractiveness of claims and final effects on liquidity and pricing is difficult as it depends on various parameters, many often left open in proposals. Even making further assumptions, though, it is not immediately clear what the effects might be. For example, much will depend on the final rating that agencies will assign to the new

[17] The temporary nature of the Redemption bond could negatively affect its liquidity (premium). Another drawback of the Redemption proposal is its limited ability to rely on diversification as a source of safety, since most of the debt pooled would be from high-debt countries, and coexistence of highly-rated national debts.
[18] Various liquidity ratios associated with Basel III could increase demand for highly liquid assets by up to 1.2 trillion euro for EU banks (EBA, 2012). This could greatly favor Eurobills if they are deemed (solely) eligible.

instrument. This is not obvious, even in light of how agencies rated earlier bonds of EFSF, EIB and the like (where rating agencies applied conservative criteria).[19] Other factors such as liquidity premium are also hard to estimate. Nevertheless, analyses to date suggest a liquidity premium for a market of the size of the euro area ranging between 15bps and 70bps.[20] Note that the ESBies, while it also offers liquidity and flight to safety premiums, otherwise maintain the price signals for each individual sovereign across the whole yield spectrum.

C. Coverage and Phase-in

Most of the analysis so far has focused on the medium term, steady state situation. It is important though to assess the initial coverage of countries, how different proposals can be phased in, the transition back to national issuances, and necessary lead-time. Table 4 summarizes proposals along some dimensions relevant here.

Table 4: Coverage, Phase-in and Transition

	Euro-bills	Blue-Red Bonds	Stability Bonds	Redemption Pact	ESBies
Countries and amounts	Could phase in, but need core. During ramp-up more	Core could be small. Amounts can adjust, up to 60%	Could phase in, but need core	All countries over 60%. Phase in 3-5 years	Initial could be (dis)-proportional, but need core
Program countries	Not. Once regain market access	Only after restructuring. All pre-restructuring debt junior	Not	Could, but only after program ends	Not
New issues or all debt	New issues, up to a cap	New issues, up to 60%	New issues	New issues during phase in, up to quota	All debt in secondary market
Exit possibilities	Could pay off, issue own, rules to limit though	Opt out (revert to red)	No, but access can be limited	Automatic at 60%. Forfeit collateral when default	Reversal possible
Lead time	Moderate, start small	Considerable	Moderate to considerable	Moderate to considerable	Minimally

[19] Some rating agencies have said that if the instrument has a several guarantee, then it would be rated according to the weakest-link approach, as it is called, where it get the lowest country rating, e.g., see Standard and Poor's (2011) and http://www.reuters.com/article/2011/09/03/us-europe-sp-idUSTRE7820RN20110903.

[20] European Commission Green paper (2011) estimates. See Warnock and Warnock (2006) for a methodology applied to the US Treasury market and replicable in principle for the euro area.

Countries included. The first question, very important in the short-term, is the country grouping envisioned. No proposal assesses this from first principles.[21] Rather, most start from the entire euro area, even though one could start with a smaller core set that expands over time. Most exclude program countries, largely as these have much of their external financing covered and/or present too large risks. In principle though, program countries could be included under some proposals (say for the Eurobills, since they have continued to issue their own short-term instruments). Some, like the Blue-Red bonds, allow for full entry of program countries post debt restructuring, but with all pre-restructuring debt made junior to new debt.

Coverage of instruments. All proposals with guarantees focus on new issuances, consistent with their use of seniority and tranching structures: newly issued debt becomes common and senior, while existing, national debt becomes junior. There are differences though in amounts (e.g., all debts below a certain cutoff as a percent of GDP (Blue-Red) or above a certain cutoff as a percent of GDP (Redemption), type of instruments covered (only short (Eurobills) versus only longer maturities, all others), and time horizon (temporary in case of Redemption, permanent in principle for all others). The focus on primary markets, i.e., new issues, presumably reflects that this will generate the largest impact for a given amount of intergovernment guarantees, and help the most with the short-term financing needs of those sovereigns under stress. The one without guarantees (ESBies) covers most old and new debt.

Phase-in. Most proposals (except for the Eurobills and ESBies) suggest a phase in over 3-5 years. During this period some of external financing of countries would come from the new instruments, with the portion the highest for the Blue-Red, then the Redemption for high-debt countries, followed by the Eurobills, and dependent on the specific option, the EC. This will obviously help those countries currently under stress as their external financing will be (largely) covered at lower costs (but with costs to rise of course for the other countries). A phase-in also avoids a large immediate effect on secondary market prices and allows for some learning by doing (and potential reversals). At the same time, reducing the perverse sovereign-bank link and limiting flights-to-quality call for faster and larger-scale adoptions.[22]

Transition. Once a country has exhausted its allotment of new bonds, it will have to transition back to national debt issuance. For the transition to a structure with different forms of debt and seniority classes to be smooth at the end of the phase-in debt sustainability and fiscal discipline need to be assured. This is needed since at the same time some debt has become senior or (more) fiscal resources are earmarked, and it will thus be harder for the sovereign to raise new funds at the margin. Issuing Red bonds, for example, can be challenging for a country when a large portion of its debt (60%) will then be senior. And

[21] This would require answering questions similar to those for optimal currency areas and fiscal unions, the accompanying democratic system for federal economic governance, as well as what other elements need to be in place (e.g., common financial regulation and supervision, for the euro area, the relevant smaller grouping, or the whole of the EU; some degree of fiscal union in the form of having common revenue bases, etc.)

[22] Some instruments can be introduced faster. For example, a common instrument, e.g., Blue-Red bonds, could be part of a large-scale debt restructuring for over-indebted countries (e.g., a kind of Brady bond deal). Clearly, this would require that post restructuring the country's debt sustainability is assured. And it would have major current implications for banks holding much of affected sovereign claims (e.g., it could imply a common recapitalization scheme). Regardless, fast introduction could require deep and rapid institutional changes.

while the Redemption Pact generally makes a smaller portion of debt senior, it does so for higher-indebted countries. In these cases, the ability to issue national debt on their own terms after the phase-in period might just very soon raise again for some countries the questions of debt sustainability and mechanisms required to address the flow of financing.[23] Failing that, an efficient sovereign debt restructuring mechanism would need to be in place.

Lead-time. To help address the current crisis, a short lead-time to set up the institutional infrastructure is important. The ESbies proposal, as it relies on the pooling of sovereign claims in the secondary market and the tranching of risks with existing instruments, can probably be set up the quickest, followed by the Eurobills, largely because of its smaller size and simple structure. Both also allow for the easiest learning by doing—as they combine a short phase in—allow for possible expansion, and yet can be easily exited. The other options would take more time, both in negotiating the terms and setting up the institutions.

Exit. Exit involves two aspects: whether and how countries can be forced to exit; and whether countries are able to exit on their own choosing. For the Redemption Pact, exit follows automatically when the country falls below the 60% of debt to GDP ratio (or at the end of the 25 year redemption period). Besides paying a penalty (which may or may not be credible), however, there is no interim exit mechanism envisioned after launch. This is in part purposeful, so as to enforce the adjustment path decided at inception. But it ignores the occurrence of shocks that might make the path untenable. The ESBies can technically be reversed quickly. The Blue-Red proposal allows for exit through (majority) voting. Eurobills exit is feasible if a country pays off its claims or lets them mature. For both, countries can decide not to renew their guarantees (although it is unclear whether this is credible in the face of acute financial distress). In principle "orderly" exit, as a choice of the country, is feasible if it prepays its share of common claims but this is not realistic for the worse countries. In addition, in order to avoid adverse effects and dynamics—better countries exiting and thereby worsening the residual pool, exit should be made difficult and costly. At the same time, the possibility of exit can give incentives to those designated to do surveillance—e.g., fiscal council, EC—to perform their monitoring role properly and enforce rules.

D. Legal and Institutional Challenges

Many legal and institutional issues arise with the common issuance of euro debt, in particular to two dimensions: those pertaining to European laws and treaties; and those pertaining to the laws and constitutions of member states. There are also questions on the governance and the accountability framework for debt issuance from both EU and national/constitutional perspectives. The proposals do not claim to have the full assessment as to these questions (and we surely do not have the expertise to issue a definitive judgment), and more work is needed on the legal feasibility of each proposal and necessary institutional changes.

[23] Take a high-debt country that only issues guaranteed debt until it reaches its sum allotted (the difference between its current debt and the 60% of GDP threshold). Depending on the profile of maturing existing debt and fiscal deficits, this could occur over 3-4 years. After that it would have to issue entirely on its own, yet its debt level could still be high, say above 100% of GDP, while the newly issued national debt would be of lower seniority status with no guarantees and some tax revenues would be dedicated to service the common securities.

EU Treaty. The main EU legal question is whether the introduction of jointly and severally guaranteed debt contravenes provisions of the European Treaty, in particular Article 125.[24] This article, colloquially known as the "no bail out" clause, effectively prohibits a member state from assuming the debt of another member state. Legal scholars used to diverge on the interpretation of this article, but bilateral assistance to Greece and the creation of the EFSF have led to some clarification. Some scholars, and the legal services of the Council, now seem to interpret the Article as compatible with joint and several guarantees as long as member states enter voluntarily into such agreements.[25] Some proposals (Blue-Red Bonds, two of the EC options) nevertheless clearly state that their proposal would require a change in the Treaty. In contrast, the ESBies proposal states clearly that it expects it would not; and the Eurobills proposal is more ambivalent about whether change may be mandatory. The Redemption Pact hints at the possibility that a new international treaty, to complement the Lisbon Treaty, could prove sufficient to address legal hurdles.

National legal questions. Each member state is likely to have important and idiosyncratic legal challenges and the possibility that constitutional amendments are necessary in a number of countries is more than distinct. This is particularly, but not only, the case for Germany, key to any decision on common debt issuance. For Germany, and likely for other countries, the issue is whether the proposals comply with the provision of its constitution with respect to prerogatives of parliament and budgetary processes. Two important rulings by the Karlsruhe Constitutional Court helped to frame the court's interpretation of these issues: one on the Lisbon Treaty in 2009 (Schorkopf, 2009) and one on the EFSF in 2011 (Mayer, 2012). Both rulings limit the scope for intergovernmental guarantees to specific designs and limited amounts.[26] Some proposals, by being more limited in scope and time of fiscal commitments, such as the Eurobills and the Redemption Pact, expect to be able to pass this German

[24] Article 125 TFEU: "The Union (…) and a Member State shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project."

[25] The creation of the EFSF and the assistance program to Greece were based on the Article 122 that allows for "financial assistance to a Member State is in difficulty or is seriously threatened with severe difficulties caused by natural disasters or exceptional occurrences beyond its control". It was subsequently decided to amend the Lisbon Treaty and in particular Article 136 in such a way that it specifically made the recourse to financial assistance between Member States a clear provision of the Treaty and therefore clarified the contours and the application of Article 125.

[26] The German legal constraints are often portrayed as categorical but our reading of legal writings suggests a more nuanced interpretation. And two important rulings frame in more details what the Karlsruhe Constitutional Court deems legally possible. The first one is a ruling of the Court in June 2009 on the Lisbon Treaty through which the Court set some important safeguards for further political integration considering the degree of democratic legitimacy imposed by the German Constitution. The second important ruling is that of September 2011 on the EFSF that sets importantly guidelines with respect to the national budgetary process and the necessary involvement of the Bundestag. In essence, the EFSF ruling flags that "permanent" and "automatic" mechanisms that could create a cost to the German budget without the approval of the Bundestag would not be compatible with the Basic Law.

constitutional test.[27] Others are explicit that they may have to confront these legal challenges.[28]

Accountability. Whether legal changes are needed for any common debt issuance is importantly also an issue of legitimacy, governance and accountability. Even if not strictly necessary, treaty and constitutional changes may be desirable since they would involve a process by which politicians, parliaments, and possibly voters are explicitly invited to opine on the new instrument.[29] Decisions are also needed on how intergovernmental guarantees are secured and renewed. What might be the best and politically acceptable procedures, however, is not clear and requires more thought.[30] Except for addressing the Treaty and German constitutional court challenge, however, most proposals leave these and other, more detailed institutional issues to be decided at a later stage.[31]

V. POSSIBLE PATHS

The various proposals' success will depend on their ability to help start a process towards a fiscal union, while conforming to the current economic challenges and political constraints. Although none of these proposals by themselves can alter the political underpinnings, they can, within the current political boundaries, precipitate further political change and tighter fiscal integration. In this light, some of the proposals should be regarded as complements rather than as substitutes. Indeed, some could be introduced jointly or in sequence to maximize their economic benefits and make their introduction politically more acceptable. Among the many possible combinations and sequencing alternatives we review two, each leading to similar outcomes, including an equivalent fiscal union.

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[27] For example, the Bundestag to renew guarantees as part of its voting every year on the budget might satisfy the ongoing involvement of the parliament sought by the Constitutional Court.

[28] There may be other institutional means to introduce commonly issued debt while respecting the Treaty and national constitutions. "Enhanced cooperation", an arrangement made possible by the Lisbon Treaty, allows a smaller group of EU countries—a minimum of 9—to establish a deeper degree of integration on specific policy areas. This could be used to organize and institutionalize the scope of policy integration required. So far, such agreements have been resisted because they were seen as allowing a multi-speed Europe and potentially weakening the EU altogether.

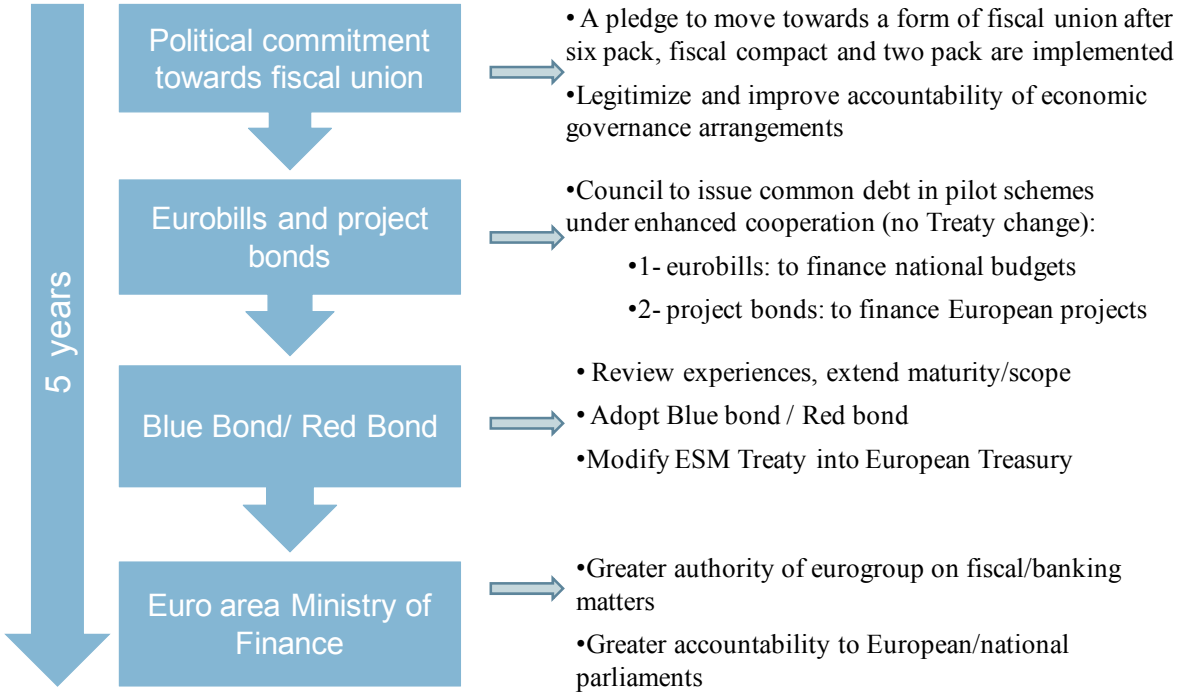
[29] Legitimacy is of course not just limited to these instruments and applies to other issues and areas across EU and Eurozone decision-making. Some guidance on what arrangements might be best comes from other federal states (for lessons from U.S. and others, see Henning and Kessler, 2012, and Bordo, Markiewicz, and Jonung, 2011). See also De Grauwe (2011), Scharpf (1988, 2006, and 2011), McKay (1996), and Von Hagen (1993).

[30] For example, if there are (annual) allocations, will there be a specific voting structure, with some countries having an explicit or implicit veto power? This has the benefit of safeguarding against some risks (e.g., during the roll-in phase, guarantees could be stopped). Or do countries sign on in general, either with an overall cap on guarantees or in some unrestricted way, with the guarantees to follow automatically? Some other essential governance questions are: What is the process for deciding whether countries have satisfied the various fiscal conditions and disciplines? Is there an appeal process, say through the European Court of Justice? Most proposals leave these issues to be decided later as well.

[31] The most specific to date, the Blue-Red bond proposal, suggests annual allocations of guarantees to be voted on by respective parliaments, with an (implicit) veto right of Germany and an appeal process with a role for the EU Court of Justice. The Redemption Pact, by design, assumes a one-time approval when debts are mutualized. The Eurobill proposal is less specific, but would obviously work best with a one-time, permanent approval.

Path 1: A first path (Figure 1) builds on the recent governance changes and associated commitment to fiscal discipline and allows a permanent mechanism to emerge relatively quickly. It starts with the issuance of Eurobills and longer-term project bonds backing specific projects. These two initiatives, being small initially, allow for learning and reversal should results be unsatisfactory or states weaken commitment to fiscal discipline. The other advantage is that it addresses sovereign-bank links right away, although on a small scale at first. This path allows moving relatively rapidly towards a broad common debt issuance and a fiscal union, yet allows for control over the pace and dynamics of the transition.

Figure 1: From Eurobills and Project Bonds to Eurobonds

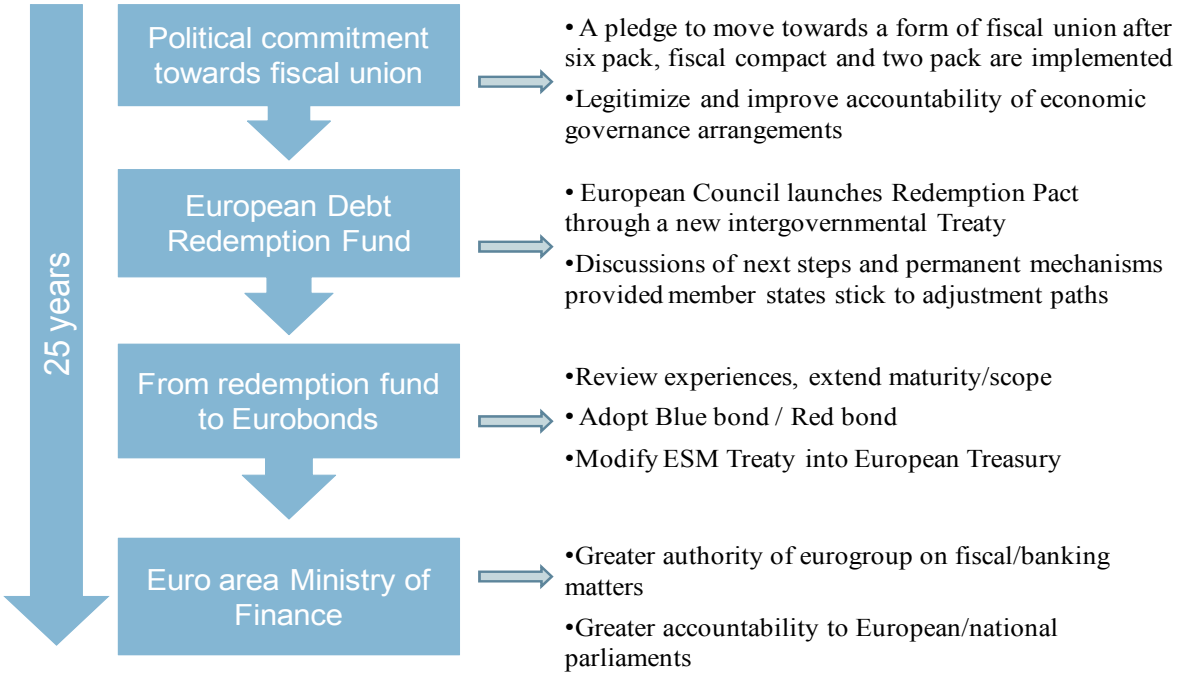


The biggest risk with this path is of a political nature since, by design, it can be abandoned quickly (e.g., if a member state decides not to renew its guarantees). Conversely, it can, if urgency calls for it and political support exists, also easily be accelerated and expanded. As a consequence, the timetable is purely indicative. Indeed, urgency related to financial distress could dictate a more rapid expansion of Eurobills to cover a larger share of debt issuance. Timing can also be adjusted depending on democratic processes that could lead to the introduction of an enhanced cooperation agreement as an intermediary step or to a new international treaty, both as steps toward a broader revision of the EU Treaty.

Path 2: The second path (Figure 2) also builds on existing governance changes, but uses as a starting point the Redemption Pact to mutualize some debt in order to achieve lower debt-to-GDP ratios. If successfully implemented, the debt-to-GDP ratio of states would after 25 years have converged to 60 percent. With debt burdens more similar, the Blue-Red bond or other such proposals could be introduced with less political tensions and concerns over moral

hazard as the current worry that highly indebted countries would require permanent subsidies would have lessened. The joint and several guarantees would then present smaller ex-ante distributional consequences, while the market-disciplining role of marginal borrowing costs would presumably be more credible. The more wide-ranging benefits of common debt could still apply and the safer mutualized sovereign debt held on banks' balance-sheets under the Redemption Pact would increase financial stability.

Figure 2: From Redemption Fund to Eurobonds



Yet this path is not without possible downsides, some arising from the limitations of each proposal individually, others from sequencing. In particular, the Redemption Pact assumes the implied consolidation paths to be tenable economically and politically. Since the sustainability and debt dynamics for key countries that would take part are currently being questioned, this raises some important credibility questions. It presumes no major shocks over the period and countries to sustain fiscal adjustments rarely observed over such a long period in any advanced economy. In addition, the ability of still high-indebted countries to issue national, junior debts following the phase-in (during which their financing requirements are largely met) is unclear. If markets start to doubt the credibility of the adjustment paths, appetite for national as well as common debt will drop, thereby threatening the Redemption Pact's feasibility. Finally, the transition from Redemption bonds to a form of Blue-Red bonds —and the accompanying strengthening of the fiscal union—may not happen. Indeed, the political will to introduce a permanent mechanism may be little both if the Redemption Pact fails (e.g., because member states deviated from their consolidation path) or if it succeeds and debt levels converge to a lower level and the urgency to pool debt recedes, thereby leaving the monetary union incomplete and exposed to future instability.

Other combinations can be envisioned, such as introducing concurrently the Redemption Fund and Eurobills (a report for the EU parliament by rapporteur Sylvie Goulard bears many parallels with this path). The Redemption fund would deal with the debt and adjustment of high-debt countries, while the Eurobills would provide some continuous market access at lower rates, even after the phase-in period of the Redemption fund ends. This combination presents some benefits over the other two paths, but comes at the cost of larger guarantees.

Overall, several combinations of initiatives can be envisioned that allow for a gradual introduction of common debt mechanisms while the necessary legislative and political changes for a tighter budgetary union are put in place. Eventually, and depending on experiences and political endorsements, member states could also agree to revise the EU Treaty with the view to establish in European primary legislation and national laws the institutions for a real budgetary union. In this context, the ESM could, after a period, have its mandate amended to evolve towards a European Treasury.

VI. CONCLUSIONS

Common debt could bring reprieve from current financial instability. Specifically, the creation of a large safe asset can reduce flight to safety from one sovereign to another and weaken the links between banks and their respective sovereigns that are currently destabilizing. Common debt issuance could also be a structural stabilizing feature of the euro area by helping to create deeper and more liquid financial markets allowing the monetary union to capture the liquidity gains of a broader sovereign debt market. Importantly, these initiatives can serve to focus attention on the need for fiscal federalism including macro-economic stabilization and risk-sharing mechanisms but also fiscal discipline.

But there clearly are risks associated with such common instruments. In terms of fiscal discipline, the pricing approaches, where countries' own debt is lower ranked and hence pays a higher price, are intriguing. But the tranching creates new challenges, not least if the junior tranches replicate the instability that we are currently witnessing. Similarly, to the extent that funds are earmarked to repay the common debt, greater pro-cyclicality may ensue as earmarked resources are less available to deal with adverse shocks.

Ideally then, common debt should follow from a fundamental discussion of the long-term shape of a fiscal, financial and monetary union. The absence of a debate on fiscal union reflects in part historical concerns that one group of countries may become dependent on another group on a permanent basis. But short of addressing these fundamental issues completely, common debt issuance can initiate a political process towards this goal. If, for the moment, there is only appetite for limited and bounded fiscal risk-sharing, then the Eurobills can start a learning process. These could be scaled up if proven successful and evolve towards more ambitious structures. If the assessment is that a key task today is to bring debt-to-GDP ratios down before further progress can be made, then the Redemption Pact is the right first step. But this would take 20-25 years and delay the creation of a permanent mechanism to complete the monetary union.

Thus, addressing both the current debt overhang problem and insuring against loss of market access likely requires combining several proposals. And while a gradual phase-in provides

some advantages, in particular as it can foster a political discussion about fiscal risk-sharing and transfers, the current financial crisis might call for more rapid introduction. Regardless, steps towards common debt issuance require an open political discussion given the importance of accountability and legitimacy dimensions associated with the embryonic creation of a fiscal union. Federations are not static political constructs and common debt issuance can both contribute to effective economic management and act as a catalyst for political change. In that sense, the proposals put forward are a constructive feature of the ongoing discussion, forcing a critical and focused rethinking of the EMU architecture.

ANNEX 1: DETAILS ON PROPOSALS

1. Euro-Bills, by Christian Hellwig (Toulouse) and Thomas Philippon (NYU)

The key idea of this proposal is to help loosen the sovereign-banks' link. It is also a learning step towards more ambitious proposals for euro-bonds. In that sense, it sets up the structure to minimize the risks, especially moral hazard, and keep the costs low. The motivation, in addition to starting at a manageably small level, is to potentially bypass treaty and German constitutional court constraints.

Key features, benefits and risks:

Issuance of euro-bills (short-maturity euro securities) that are the joint and several obligations of all euro-zone (EZ) members. The bills would be issued by a euro area Debt Management Office (DMO). All EZ members would participate and the DMO would be the only issuer of short-term bills on behalf of the members. Treasuries of the members would submit demand schedules for issuances on the basis of which the DMO would, using auctions and other methods, issue euro-bills to cover all the needs. If there is any unbid amount, ECB would buy (like the German Bundesbank who buys as an agent any unsold Bund issuance, and then resells on the secondary market). The proposal is consistent with the long-term goals of EZ fiscal and financial integration.

Bank asset. As a safe asset, Euro-bills would be treated for regulatory and accounting purposes at banks and other financial institutions like the highest rated sovereign claim now (e.g., Bunds). They would receive zero weight for capital adequacy purposes, similar accounting treatment (book-value reporting, no mark-to-market), and also be the only level 1 sovereign claim accepted for liquidity purposes (e.g., to meet any liquidity ratio under BIII).

All countries would need to be included initially (except those under programs). Bank-sovereign links would be broken as euro-bills have less and pooled sovereign risk.
Fiscal discipline. In return for the joint and several liability, conditionality on fiscal discipline would be required. It would be enforced through a pricing mechanism rather than through quantitative targets. Instead of shutting countries out, participants may be asked to pay a penalty interest rate if they do not meet criteria of fiscal responsibility.

Limits on joint and several liability. Strong countries would provide the bulk of the initial guarantee. Weak countries could be asked to pay a small premium over the Euro-bills rate, perhaps related to their fiscal and debt situation. This premium could go into a fund for insurance or be used to (temporarily) offset the higher costs for others.

Risk management

To prevent excessive issuance, there would be a cap, e.g., total euro-bills could not exceed 10% of country GDP, similar to ratio of stock of T-bills in the US. In the short run, there may also need to be a cap on short-term borrowing outside euro-bills (with some flexibility for cash management). The rest of a country's needs would have to be met independently

through longer-dated bonds, which will be subject to the market test. Rates on long-term bonds would provide valuable price signals for the DMO.

Because the bills expire in a short period and the amount is capped, contingent liability to the main guarantor countries is relatively well defined and limited. Thus objections of the German constitutional court may be overcome. (The court argued that the German authorities cannot take on an obligation that is open-ended, unpredictable, and subject to the decisions of other sovereigns. While the euro-bill does not overcome the risk that other sovereigns may misbehave and hence create a cost for the German taxpayer, the risk is minimized and capped.)

Short-run sovereign crisis management

At 10% of GDP, Euro-bills could cover about half of the funding needs of Spain and Italy in 2012.

- *Costs*. Euro-bills might raise borrowing costs for some, but this need not be (much) for two reasons. One, in general, and clearly for the US T-bills, there is a liquidity premium for short-term, very liquid, near cash instruments. This premium now accrues, to some degree, to German bills, but is still less than that for US T-bills since the volume is smaller, and does not accrue to other EZs since volumes are even smaller (and for some the credit risk is currently high). Two, if euro-bills improve overall fiscal policy, debt management of weaker EZs, they may reduce the implicit fiscal liability (and other economic costs) that stronger countries now incur, thus reducing their borrowing costs.

- *Moral hazard* is minimized by: (a) capping the amount of issuance, (b) allowing for a price-based incentive mechanism, and (c) creating an explicit guarantee instead of the current implicit and open-ended guarantees.

- *Oversight*. In the long run, procedures should be designed to allow parliamentary oversight while ensuring stability of Euro-bills. Parliamentary oversight is a democratic requirement for all countries, and a constitutional one for some (e.g., Germany).

- *Exit*. If a country is dissatisfied, it could exit, but hurdles would be high. Exit procedures must be transparent, predictable, and costly. As long as the DMO (or other institution) enforces the rules, countries will choose to stay in. But the possibility of exit will give incentives to the DMO to perform its monitoring and enforce the rules.

- *Institutional infrastructure*. Design of the issuance process and institutional infrastructure could build on existing best practice DMOs in the EU (nevertheless, many issues would need to be explored further, related to the choice of market-markers, institutional infrastructure, e.g., payments system, etc.) Designating market-makers with specific obligations can help limit short-run liquidity issues, especially to ensure a smooth functioning of the secondary market. For primary market, where currently, some national central banks fulfill this role, the ECB would have to take this on. There is probably the need to develop, in parallel, derivatives markets. To the extent that this is OTC—through repos, swaps etc.—this will happen organically and quickly. Possibly, however, more formal exchange-based instruments need to be introduced in parallel.

2. Blue-Red Bonds, by Jacques Delpla and Jakob von Weizsäcker (2.0)

The key idea of this proposal is to create a Euro-wide "blue" bond but one that is restricted to the sum of 60 percent of each member's GDP. This safe bond would insulate banks from sovereign risks and potentially lower borrowing costs for sovereigns. Also, any residual borrowing by a sovereign would occur through a "red" bond" on its own account and hence at a cost that reflected its creditworthiness. This is an ambitious proposal (short of euro-bonds only) and as such has many institutional/financial markets requirements to minimize the risks, especially moral hazard, and keep the costs low. Moreover, in view of the fiscal risk transfer implied in the proposal, it faces the biggest hurdles in implementation.

Key features, benefits and risks

Euro-area countries would divide their sovereign debt into two parts. The first part, up to 60 percent of each country's GDP, should be pooled as 'Blue' bonds with senior status, to be jointly and severally guaranteed by participating countries. All debt beyond that should be issued as purely national 'Red' bonds with junior status.

- Blue debt is senior, repaid before any other public debt—except the IMF which enjoys super seniority—and issued only up to 60 percent of GDP, below the debt-carrying capacity of any developed EU member state, even under extreme stress. On top, Blue debt is jointly and severally guaranteed. It thus will likely enjoy super-safe AAA.

- *Costs*. These bonds would be the lion's share of sovereign borrowing in the euro area. It would make debt more affordable by creating an asset on par with the US Treasury bond that satisfies the demand for safe and liquid investment opportunities, including from central banks and other large investors. Conservative guesstimate of liquidity gains are that countries could save up to 0.30 percent each year, or perhaps as much as a 10 percent reduction in the net present value of debt servicing costs.

Governance mechanism

The annual allocation of Blue Bonds would be proposed by an independent stability council staffed by independent professionals (like board of ECB). This allocation would approved by national parliaments of participating countries, having the ultimate budgetary authority required to issue the Blue Bond mutual guarantees. Any country voting against would thereby decide neither to issue any Blue Bonds in the coming year nor to guarantee any Blue Bonds of that particular vintage. Since exit of any major participating country could undermine confidence in the entire scheme, the independent stability council would have incentives to err on the side of caution, thereby safeguarding the interests of the European taxpayer.

- **Moral hazard.** First, institutional control: the independent stability council allocates Blue Bonds according to principles of the SGP and notions of general fiscal sustainability, exemplified by national fiscal rules. Second, borrowing costs for Red Bonds would be high for countries in breach of the SGP, thereby imposing market discipline.

- **Entry.** Full participation is not an entitlement but to be earned through enhanced fiscal credibility, by means of low debt levels or credible institutional guarantees (credible national fiscal rules in particular) that put public finances on a sustainable path.

- **Blue debt agency.** For Blue Bonds to be the operational equivalent of plain national sovereign debt, a joint debt agency will be created to which tax revenues would be transferred directly to avoid the holding discount customary for multilateral debt.

Red Bonds: These would help to enforce fiscal discipline. Red Bonds would make borrowing more expensive at the margin, especially for countries pursuing unsustainable fiscal policies or lacking fiscal credibility, thereby reinforcing the rules-based Stability and Growth Pact through market signals.

- *Juniority*: Red debt, as the junior tranche, could and would be honored only after the entire Blue debt has been fully serviced. Red Bonds could form the basis for an orderly default mechanism (and would allow for a smaller ESM).

- *National responsibility*: Red debt would be issued by national Treasuries. Red debt can never be guaranteed by another country or be bailed out by any EU mechanisms (EFSM, EFSF, or ESM). The 'no bail-out' would apply only and strictly to the Red debt.

- *Not in banking system*: To allow for an orderly default, Red debt should largely be kept out of the banking system through two measures. First, only Blue, not Red debt is eligible for ECB refinancing operations (to avoid disruptions, this could be implemented gradually as Red Bonds are introduced). Second, regulators need to assure that holdings of Red Bonds are backed up by higher capital requirements.

Introduction of Blue-Red Bonds. Could either occur gradually, with Blue and Red Bonds replacing legacy debt as it is rolled over, or in a big bang in exchange for the entirely legacy debt stock. Gradual is more attractive to gain credibility and political support, as well as to avoid large valuation effects. A big bang would, however, create a deeply liquid pool of Blue debt would be created overnight and could potentially be used for a comprehensive debt restructuring if views on debt sustainability suggest this necessity.

3. Stability Bonds, by European Commission[32]

The key ideas of this discussion paper is to review means by which governments can finance by offering safe and liquid investment opportunities for savers and financial institutions and provide options for setting up a euro-area wide integrated bond market that matches its US Dollar counterpart in terms of size and liquidity. Three options are tabled with varying order of ambition. Depending on the option chosen, many institutional/financial markets changes are required to minimize the risks, especially moral hazard, and keep the costs low. Options would need to be accompanied by varying degrees of closer and stricter fiscal surveillance to ensure budgetary discipline. Some options might require a Treaty change.

Key features, benefits and risks

There are really three options tabled, in order of ambition: 1. The full substitution by Stability Bond issuance of national issuance, with joint and several guarantees—full Eurobonds; 2. The partial substitution by Stability Bond issuance of national issuance, with joint and several guarantees—akin to Blue-Red Bonds; and 3. The partial substitution by Stability Bond issuance of national issuance, with several but not joint guarantees (i.e., liable for a share based on some key)—akin to an EFSF structure. As such, the proposal encompasses a wide spectrum, with corresponding varying demands for (changes) to institutional environments to address moral hazard risks.

Option 1: "Eurobonds"

- **Joint and several.** All participants will be jointly liable for debt, thus lowering refinancing cost for some, with the strongest distributional impact between participating members and the highest degree of fiscal risk-sharing.
- **Issuance, debt-servicing**. Most efficient if centralized, but could still be decentralized.
- **Financing**. Participating countries could refinance themselves irrespective of national public finance conditions, thereby helping some deal with current funding pressures.
- **Amounts, liquidity premium**. Amounts would be large and there would be scope for liquidity premium gains and enhanced monetary policy transmission.
- **Stability**. Sovereign-banking systems links would be broken, with associated gains.
- **Conditions.** To balance the open-ended risks of full Eurobonds—creating high incentives for moral hazard—strict conditions would need to apply, going beyond current regulations, including on budget adjustment and structural reforms.
- **Treaty**. It would need changes/amendments to the Treaty and take considerable time.

[32] European Commission (2011).

Option 2: "Blue-Red Bonds"

- **Joint and several.** All participants will again be jointly liable for the Stability Bonds, but up to a limit and not for any remaining national debts.

- **Limits.** The Stability Bonds would be limited in volume to up to a predefined level (60% of GDP or variable linked to compliance with rules and recommendations of governance framework) and be senior ("Blue bonds"). Remaining debt would have to be financed with junior debt ("Red Bonds").

- **Costs**. Senior debt would face somewhat lower refinancing cost for some countries, with some distributional impact between participating members and fiscal risk-sharing.

- **Issuance, debt-servicing**. Most efficient for senior debt if centralized, but could also be still decentralized.

- **Financing**. Depending on exact phasing-in schedule, participating countries could refinance themselves in the buildup phase more liberally, less respective of national public finance conditions, thereby helping some with current funding pressures.

- **Amounts, liquidity premium**. Amounts would be relatively large and there is scope for liquidity premium gains.

- **Stability**. Sovereign-national banking system links would be broken to some degree, with associated gains.

- **Conditions**. To balance the risks, particularly during the start-up phase, with incentives for moral hazard, conditions would need to apply, going beyond current regulations, including on budget adjustment and structural reforms.

- **Treaty**. This option would likely require changes to/amendment of the Treaty.

Option 3: "EFSF Bonds"

- **Several.** Participants will only be liable for Stability Bonds up to a predetermined share/amount.

- **Limits.** The amounts would be limited and determined as guarantees are forthcoming.

- **Costs.** Debt would face the same or somewhat lower refinancing cost for some countries, with some distributional impact.

- **Issuance**. Debt-servicing. Would likely still decentralized.

- **Financing.** Depending on phasing-in schedule, countries could refinance themselves in the buildup phase more liberally, less respective of national public finance conditions, thereby helping some countries deal with current funding pressures.

- **Amounts.** liquidity premium. Amounts would be limited, with less scope for liquidity premium gains.

- **Stability.** Sovereign-national banking system links would not be broken.

- **Conditions.** For moral hazard, conditions would still need to apply.
- **Treaty.** This option would likely require no changes to/amendment of the Treaty.

4. European Debt Redemption Pact, by German Council of Economic Experts[33]

The key idea is to separate the debt that has been accumulated to date by individual countries into a part that is compatible with the 60% debt threshold of the SGP, and a part exceeding this threshold. States' debt exceeding the 60 % ceiling on a certain date would be transferred into the European Debt Redemption Fund (ERF) for which all members would be jointly and severally liable. In return, countries would enter into payment obligations toward the ERF so as to repay the transferred debts within some 25 years. During a roll-in phase stretching over a couple of years, participating countries shall be able to refinance themselves up to an amount. The authors suggest that the design overcomes European legal barriers to implementation.

Key features, benefits and risks

- **Eligibility:** Participation is open to all Euro-countries. At the very least, states with debt above 60 % of GDP (at 2011, Austria, Belgium, Cyprus, Germany, France, Italy, Malta, the Netherlands, and Spain) should take part. Countries with adjustment programs can join immediately, but their debts can only be transferred after their program ends.

- **Joint and several.** While each country will have to service its own debt, participants will be jointly liable for the debt, thus lowering refinancing cost for some.

- **Financing:** During a roll-in phase, participating countries can refinance themselves up to the amount their current debt exceeds 60% of GDP. This amounts to about EUR 2.3 trillion, of which Italy (958 billion), Germany (580 billion), France (498 billion), Belgium (136 billion) and Spain (88 billion), Austria (41 billion), the Netherlands (24 billion), Malta (0.5 billion) and Cyprus (0.4 billion). Actual refinancing depends, besides on current debt level ratios, on debt term structure. French, Italian and Belgian financing requirements will be covered for 3 to 5 years. Germany, Spain, the Netherlands and Austria would partly finance under their own national responsibility already.

- **Conditions.** To take advantage of lower costs for the transferred debt, strict conditions apply, including: earmarking/devoting a part of the tax revenue for fulfilling the payment obligations; depositing collaterals, and obligation to commit to consolidation and structural reforms. Remaining national debt must after ERF not again exceed 60 % of GDP. To this end, debt brakes need to be introduced in all participating countries (based on the German and Swiss models). In particular, following a transition period, the structural deficit should not exceed a value of 0.5 % of GDP.

- **Costs.** Market liquidity for ERF bonds would presumably be high as amounts are large. Proposers estimate that interest rate to be between 2.5% and 4%.

- **Limits.** Unlike Eurobonds, the debt assumed by the ERF is from the outset limited both in time and in volume. With each redemption payment to the ERF, the volume of bonds guaranteed jointly and severally decreases, meaning that the fund slowly abolishes itself.

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[33] See Bofinger et al (2011).

Nation states are themselves responsible for financing their current deficits through the market after completion of the roll-in phase.

- **Timing.** As the roll-in into the ERF is stretched over a range of several years, changes at the constitutional level could take some time—but would require commitment now.

- **Exit.** If a country failed to honor commitments during the roll-in phase, the roll-in would be stopped. When a participant failed to honor its commitments at any time, the participant would forfeit the collateral deposited with the new Fund (20% deposit in the form of international reserves, gold and foreign exchange), and earmark/devoted tax revenues would be used for fulfilling the payment obligations.

Additionally, to prevent the ERF to finally degenerate into unconditional Eurobonds the highest constitutional safeguards will have to be put in place in each country. In the case of Germany this would mean to link any prolongation or perpetuation of the ERF to Article 146 of the German Basic Law which eventually means that a referendum is necessary about a new constitution.

5. European Safe Bonds (ESBies), by Euro-nomics, a group of European Academics.[34]

The European Safe Bond (ESBies) would be the senior tranche of a portfolio of European bonds. Such a bond would serve two purposes. First, because it will be very safe, banks that hold ESBies would limit their exposure to sovereign risks. Second, where there is a flight to safety, it would be from the junior (risky) bond to the ESBies and not, as now, from one country to another—such flights being a source of multiple equilibriums and instability. Because the core proposal requires no sovereign guarantees, it faces no legal hurdle to implementation, and can be reversed. Its intent is to use public initiative to solve a coordination problem such that the established products are eventually taken over by the private sector.

Key features, benefits and risks

In its essence, a new European Debt Agency (EDA) would buy existing sovereign bonds of the 17 euro nations, up to 60 percent of each country's GDP. The EDA would issue and sell on the private market two securities backed by these assets: European Safe Bonds (ESBies) and European Junior Bonds (EJBs). Credit enhancement (capital guarantee) could be added.

- **Pool secondary market bonds.** EDA would (in steady state) buy sovereign bonds in secondary markets only, in proportion to each country's GDP of all countries, not just the troubled countries. While ESBies scheme is phased-in, countries would have on average some three years of funding covered, which provides breathing room for countries in stressed situations to make the necessary structural adjustments and ride out the business cycle.

- **Creating a safe asset.** ESBies would be extremely safe, since they are senior claims on diversified portfolio of sovereign bonds (with a possible capital guarantee). ESBies would not take any losses unless all the EJBs (and capital guarantee) were wiped out. Authors estimate that thirty percent EJBs and seventy percent ESBies would make ESBies safe in all but 0.8% of 5-year periods.

- **Delinking the sovereign and banks.** ESBies is large and would share risks among all euro area countries, thus breaking bank-own sovereign links. Regulatory requirements and ECB collateral policy would be adjusted to make them the preferred asset for banks to hold for liquidity purposes and refinancing operations. This would further break the link between banks and sovereigns.

- **Liquidity and flight to safety premium.** ESBies would pool 5.5 trillion euros in sovereign bonds. It could trade at a premium because they would be large and liquid, appreciate at times of crisis, and satisfy a large, global demand for safe assets. This could lower funding costs, authors estimate by up to 70 basis points

[34] Proposed by the euro-nomics group, consisting of Markus Brunnermeier, Luis Garicano, Philip R. Lane, Marco Pagano, Ricardo Reis, Tano Santos, Stijn Van Nieuwerburgh and Dimitri Vayanos, 26 September, 2011.

- **No joint liability**. In their purest form, ESBies and EJBs would carry no government guarantees and require no fiscal union. They would require little to no change to current Treaties. In this regard, ESBies can, in principle, be implemented at a rapid pace, help dealing with the crisis, and create an institutional structure of longer-term value. While large, it would still be a "low-risk" option in that can be reversed.

- **Redirecting the flight to safety to prevent multiple equilibriums.** Currently, changes in risk perceptions lead to large capital flows between countries, which creates self-fulfilling outcomes and raise financial stability concerns. With ESBies and EJBs, the flight to safety would occur between these two assets without geographic disruptions.

- **While maintaining market signals, across complete term structure.** ESBies and the junior tranche do not eliminate price signals regarding countries possible insolvency, thus continue to provide market discipline. Since original debt structures are preserved, ESBies provides a complete reference terms structure.

- **Transition Phase.** To help overcome funding crises of some specific European sovereigns, EDA could buy in the primary market and be, in the worst case, the only participant. For example, in a transition period, the EDA could buy in the extreme case up to 940 billion euro worth of newly-issued Italian bonds, the country's financing needs for the next three years. EDA would purchase these bonds at—or close to—secondary market prices. As expectations are realigned with fundamentals, yields on all European bonds, but especially those in the problem countries, would come down.

- **Current program countries.** There are good reasons to exclude these countries initially. Some countries have currently guaranteed financing at low rates low. It is therefore in their interest to borrow from the IMF/EFSF/EU rather than to place their bonds with the EDA. Also, since there is no liquid market for their debt, it would be difficult to establish the right market price for the EDA purchases. And if these countries restructured their debt, as in case of Greece, the EJB would start off delivering ex post low returns which would hinder the EDA's ability to sell them and establish a reputation. Countries could though gain admission to the EDA upon exiting their programs, providing another incentive to repay their debts and undertake necessary structural reforms.

- **Who will buy EJBs**. Authors estimate that at sovereign, 10-year maturity bond rates of late last year, EJBs would earn a yield-to-maturity of 9.8% per annum, high in the current environment, attractive to say sovereign wealth funds. A second attraction of these securities for some investors may be that they have "fixed embedded leverage." And, in the same way that households hold a large fraction of sovereign bonds today, the authors expect there to be substantial demand for EJBs from the household sector.

- **Market-maker for EJB.** In the short-run, to further create liquidity for EJBs, a market maker may be needed. This may initially need to be a public institution to help overcome the initial coordination failure. As markets learn about the new product and institutional arrangements supporting ESBies and EJBs, the designated market maker could make substantial trading profits from its liquidity provision, which would bolster its market-making role down the line.

ANNEX 2: MONETARY POLICY, FINANCIAL MARKETS FUNCTIONING

There are many others monetary policy and financial market questions to be analyzed. Annex Table 1 summarizes the proposals along some of these dimensions

Annex Table 1: Monetary Policy and Financial Markets

	Euro-bills	Blue-Red Bonds	Stability Bonds	Redemption Pact	ESBies
Monetary policy transmission mechanism	Most direct	Over time through single instrument	Depending on option	More limited, temporary	Possibly through single instrument
Price effects	Limited/none	New seniority classes could mean large changes if phased in fast and an issue at transition points			Limited. Maintains price signals across yield curves
Scope for "arbitrage"	Limited, except for "kink" at 1 yr	Possibly, among various classes and through collateral			Scope for some among classes
Institutional infrastructure	A central Debt Management Office allocates	Joint debt agency. National govts still issue Red debt	Depending on option, could have a central debt office	European Redemption Fund (central debt office)	A new European Debt Agency

Monetary policy and ECB collateral. As regards to the specific objective of improving monetary policy transmission, the Eurobills may have the most obvious direct benefits to offer since short-term sovereign instruments tend to be used most for monetary policy purposes and are important pricing benchmarks by banks and other financial institutions for lending. More generally though, by providing a single safe assets, all instruments offer potential gains in terms of improving financial markets' functioning and some can also assist in exiting from unconventional monetary policy and liquidity operations (such as LTRO). Another question is whether the new instruments will be (solely) eligible as collateral (with no or minimal haircuts) for the ECB and national central banks. Most proposals clearly say so for the senior claims, but few say explicitly that the junior tranches are not eligible as collateral (the Red bond is not acceptable as collateral; some proposals also suggest that remaining national sovereign claims rated less than AAA could only be accepted with haircuts).

Secondary market prices and arbitrage. All proposals will have implications for the secondary market prices of existing, national debts, but net effects are not clear. If the scheme enhances overall debt sustainability (by lowering borrowing costs or enhancing fiscal discipline), prices of all (classes of) debts can increase. There will also be arbitrage between primary and secondary market prices and between claims with different seniority or guaranteed status (e.g., between a joint and several guaranteed short-term claim issued in the primary market and an existing sovereign, unguaranteed long-term claim with a short residual maturity). But if the seniority structures are meaningful, one should not expect full arbitrage between different seniority classes and prices of existing debts that become junior

to the new (common) instruments can decline.[35]

There are also some risks. If valuation losses for existing debt holders like banks are large, this may be destabilizing. Also arbitrage and profits-seeking trading strategies may have unexpected and undesirable consequences, especially in transition, when there will be multiple types of claims with varying obligors, guarantees, and seniority status. The possibility of "dual markets" can not only lead to fragmentation and reduced liquidity, but may also create unpleasant dynamics. For example, the interplay among the various instruments of all sovereigns involved, including through the CDS market, can be destabilizing (e.g., a downgrade of one sovereign will affect those sovereigns which guarantee (in part) the debt of that sovereign, which can trigger adverse feedback/negative spirals).[36] Some of these risks are probably the least with the Eurobills, since it has a simple structure, but much will depend, besides on the speed of phase-in and comprehensiveness of the schemes, on the investor bases holding various claims.

Market making. Another question, though likely more of secondary importance, is whether there is a need for a market-making role by the public sector, either in the short-run or more permanently, or whether private financial markets alone can take this on. Arguably, the novelty of some of the instruments would call for some public backup, if just to assure liquidity. This is probably the least necessary for the Eurobills, but the ESBies proposal sees a role for the EFSF/ESM to backup the EJBs. Related are questions, albeit mostly also of secondary importance, on the need for (new) payments and clearing systems, formal secondary market trading mechanisms, and derivatives markets for the new instruments.

[35] In the context of the Eurobills, for example, there could be a "kink" in the yield curve, i.e., a discontinuity in the term structure of interest rates, and a difference between it and other unguaranteed long-term claim with a residual maturity less than 1 year. This could adverse affect pricing of risk along the term structure and create negative incentives for the borrower (purposeful shortening the maturity).

[36] In the context of the financial crisis, tranching structures of mortgages and other securitized assets have led to runs on a more junior instrument triggering adverse price dynamics in other, more senior tranches ones, with adverse feedback loops. Arguably, this was a case where the probabilities of default on the underlying assets were considered to be low, but where the loss given default turned out to be large, in part as in the adverse states of the world, risks turned out to be closely correlated. Whether there are these parallels here to the sovereign case is not clear, but there may be lessons from the pricing of EFSF bonds, which also have guarantees.

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