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A Common European Government Bond

Discussion Paper



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Executive Summary

Introduction

Recent years have seen important steps taken towards market integration and greater efficiency in European government bond markets. At the same, and with the euro area increasing in size¹, European government bond markets remain fragmented.

The 10th anniversary of European Economic and Monetary Union is therefore an appropriate time to reflect not only on the success of a common European currency but also to consider the gains that can be won through further market integration. As such, it presents an opportunity to study and debate larger scale initiatives such as a possible common European government debt instrument.

The market turmoil arising from the credit crisis has widened spreads between European sovereign issues and increased the liquidity premia paid by individual issuers. The crisis has served to demonstrate more than ever the value of large and liquid benchmarks in government debt securities.

Debate on a common European government debt instrument tends often to highlight political and legal obstacles without thoroughly investigating the tangible benefits at stake. The EPDA hopes that this paper will help to provide guidance on the shape that any future common debt instrument might take. The EPDA wishes to thank those that contributed to the paper either directly or indirectly through their willingness to be consulted: EPDA Member Primary Dealers², international ratings agencies (Fitch Ratings, Moody's, Standard & Poor's) investors and academics.

Structure

This paper has two main components:

- (i) A discussion of the “qualitative” matters related to common issuance, addressing the arguments for and against the introduction of such an instrument in Europe; and
- (ii) A survey of Primary Dealer views on the pricing of a possible European common issuance of T-bills or bonds in order to provide some “quantitative” relative analysis of the merits of common issuance.

Costs and Benefits of a Common European Government Bond

The arguments for and against a common European government debt instrument can be assessed by reference to market participants - issuers, taxpayers, dealers, and investors - as well as benefits for the Euro itself.

It is contended that the prospect of common issuance creates scope for much larger volume issues and could reduce the costs of borrowing for Member States, with greatest advantage for smaller and medium sized issuers. A common European government bond would better enable Europe to compete with the US Treasury market as the most liquid market globally and could aid the development of the euro as a reserve currency.

For dealers, a consolidation through one euro issuer of euro sovereign bond issuance would likely remove the need for national Debt Management Offices to enforce market making obligations on Primary Dealers which is a large cost for those that participate in the market.

It has been contended that investors and financial intermediaries might see some investment options and arbitrage possibilities reduced following the creation of a common European government bond, as well as the sell side seeing business opportunities reduced through less derivative and syndication advice to governments.

¹ The euro area will number 16 Members with Slovakia's admission in 2009.

² The following Primary Dealers participated in the pricing survey: Bank of America, Barclays, Calyon, Citi, HSBC, ING, JP Morgan, Lehman, Morgan Stanley, Nomura, Royal Bank of Scotland, Société Générale, UBS.

However it can be argued (at least by reference to the theoretical instruments developed for this paper's market survey) that, as sub-AAA issuers would still need to have significant separate sovereign issuance, this would retain other opportunities for investors, relative value trading for intermediaries/hedge funds, and business opportunities for sell-side firms.

Nevertheless, it would enable a euro area-wide futures contract based on the underlying common bond rather than one based on a single sovereign issuer as at present. A common European government bond would also create possibilities for a larger and more liquid repo market enabling dealers to take short positions more easily and enhancing liquidity in the cash market. The cash, repo and futures market could work in a virtuous circle each enhancing the others' liquidity which would then lower the cost of borrowing in the first instance.

Development of theoretical common bonds

This paper's quantitative analysis is based on best estimate prices provided by 13 participating Primary Dealers in the European government bond markets for six theoretical European common government debt instruments. These theoretical instruments were developed with the cooperation of the three major international credit rating agencies³, as well as academics and investors.

The range of theoretical debt instruments were intended to reflect variations on the following factors:

- Participation of all 15 euro area issuers or participation of some issuers only
- Total annual sovereign bond issuance or 50% annual issuance or T-Bill only.
- A mechanism, namely a "Guarantee Fund", to ensure payments are met in event of an issuer default, and therefore to raise the credit quality of the bond.

Other elements of the theoretical bonds remained constant. These were:

- A common debt instrument structure requiring participating issuers to pool their funding requirements through an independent agency, free from political interference.
- An agency to issue fungible bonds in various maturities to the market. Each Member State could be set a specific percentage of the liability for all bonds correlated to their overall funding requirements. To be effective, an agency would need to be flexible in satisfying the funding requirements of a particular Member State during the course of a year although its overall percentage of total issuance for that year would remain fixed.
- In order to attract the highest possible credit ratings, any European debt instrument would need to be senior to any subordinated debt issued by euro area sovereign issuers. However, following the implementation of common issuance, a transition period would need to occur during which outstanding sovereign debt would mature or be bought back by issuers. Commonly issued debt could not therefore be expected to realize its full value or credit quality until the end of this transition.
- The several liability of participating issuers. Consistent with the terms of the EU Maastricht Treaty, each participating issuer would be liable for its share of total debt only, and not for the debt of other issuers.

The EPDA six theoretical debt instruments surveyed were:

- I. **15 euro area sovereign issuers, comprising their total annual issuance.** Total annual issuance: €1,474bn. Total debt outstanding: €4,426bn. Bond credit rating: A/A/A1
- II. **15 euro area sovereign issuers comprising their total annual issuance, with a "guarantee fund" administered by the issuing agency.** Total annual issuance: €1,474bn. Total debt outstanding: €4,426bn. Bond credit rating: AAA

³ Fitch, Moody's and Standard & Poor's.

- III. **15 euro area sovereign issuers comprising 50% of their annual issuance** (remainder issued by sovereigns as subordinated debt), with a “guarantee fund” administered by the issuing agency. Total annual issuance: €737bn. Total debt outstanding: €2,213bn. Bond credit rating: AAA
- IV. **12 euro area sovereign issuers (excl Fra, Ger, Ita) comprising their total annual issuance**, with a “guarantee fund” administered by the issuing agency. Total annual issuance: €566bn. Total debt outstanding: €1,376bn. Bond credit rating: AAA
- V. **6 AAA-rated euro area sovereign issuers excluding Fra & Ger (ie, Aut, Fin, Ire, Lux, NL, Spn)**, comprising their total annual issuance. Total annual issuance: €173bn. Total debt outstanding: €763 bn. Bond credit rating: AAA
- VI. **6 Month T-Bill for 15 euro area sovereign issuers comprising their total annual T-Bill issuance**. Annual issuance: €849bn. T-Bill credit rating: A-1+/P-1/F1+

Market Survey

The six theoretical debt instruments were given a best estimate fair market value price by the 13 participating Primary Dealers as at the end of the trading day on Monday 23 June 2008. A number of assumptions were built into the instruments in order for their pricing by dealers.

In addition to the characteristic of the theoretical bonds described above, participating Primary Dealers were asked to take the following assumptions into account in pricing the theoretical debt instruments.

- Assume that each of the six Common Bonds is politically possible.
- Assume they are fungible instruments with a common structure.
- Any transition phase required in order to fully implement the common bond would have lapsed.
- Bond ratings not affected by sovereign credit rating changes.
- Independent debt agency free of political influence.
- Independent legally binding obligations between issuers and debt agency.
- In the options where it is incorporated, a “Guarantee Fund” of sufficient size in order to ensure that bond payments are satisfied in the event of an issuer default.
- The existence of a highly liquid repo market, as the common bond will replace the various European Government Bonds as the repo instrument of choice.
- A highly liquid common bond futures market.

Favoured Options: 6 Month Bill and Smaller Issuers Clubbing Together

The pricing results and subsequent feedback from participating Primary Dealers and others endorsed those options that embraced simpler structures, and which did not incorporate a guarantee fund. These were therefore the common 6 Month Treasury Bill (Option VI) and the option of bonds issued jointly by a group of small/medium sized AAA issuers (Option V).

The 6 month T-Bill is of modest ambition compared to the other structures and its credit risk is very limited, due both to the limited duration of debt and the relative uniformity of issuers’ short term credit ratings. It would also incentivise issuers to manage prudently their debt due to the possible impact on their sovereign coupon issuance. Option V, on the other hand, could enable smaller AAA issuers to reduce the liquidity premia on their debt whilst demonstrating the feasibility of a common bond.

Although the market survey showed benefits for most euro area Members, the theoretical bonds (with the exception of the 6 month T Bill) were deemed unlikely to trade through Germany. Many participating Primary Dealers noted the difficulty of pricing bonds aggressively in the current market conditions. The current market volatility, coupled with the number of assumptions that dealers were asked to take into account, contributed in large part to more conservative pricing. Despite of being specifically asked not to, many dealers doubted the possibility of the bonds coming to fruition and follow-up feedback suggests this doubt crept into their pricing of the bonds. This being said, the value of the survey lies primarily in the relative value of the various options as compared to each other; rather than as a comparison to current instruments that exist in the market and are free from ambiguity.

Lessons from the Market Survey

The survey was instructive in identifying a number of factors that should be taken into account by any further detailed work on a common European government bond. These include:

General aversion to structured products

- Dealers recognised that investors would need to be comfortable with the product such that it might take some time for its acceptance by the market and for all the perceived benefits to materialise.
- Options incorporating the “Guarantee Fund” were viewed by participating dealers as a structured product for which current investor appetite is poor although this may change when markets recover.
- The recent crisis has shown that the offloading of risk by issuers into common structures can leave issuers with fewer incentives to manage risk effectively.
- The “Guarantee Fund” would need to be defined in greater detail and be viewed as free from political influence for the market to price these common bonds more aggressively.

Subordinated debt favoured

- From a pricing point of view, the mechanism of senior (common) debt and subordinated (national) debt was much preferred to a “guarantee fund” if a simple mechanism could be developed which could prevent issuers offloading risk into the common structure. In other words, the senior debt would need a simple structure to ensure it retained a AAA rating with the percentage of debt permitted therein for non-AAA issuers capped accordingly
- However subordinated debt would carry a credit premium and be priced accordingly in market

Simplicity a virtue

- Feedback from the market survey indicated a preference for simple and transparent products which would be easy for investors to understand.
- Option V and VI share the advantages of being the simplest and most palatable options.

Further Work

Despite limitations inherent in a survey of this kind, the market survey does demonstrate potential benefits and possible starting points for common issuance, which are explored further in the body of this paper. The EPDA concludes that there is a strong case for examining more closely a common T-Bill for all euro area issuers or a common issuance of small to medium sized issuers, although this is not to say the market endorses such innovations. The devil is in the detail and such structures would need to be defined in greater detail before the market could view them as plausible and worthwhile.

For all the qualitative and quantitative benefits of a common issuance, its success will stand or fall on investor demand. The EPDA therefore strongly recommends that at any such time that a common issuance is considered at the official level, both the buy and sell sides should be closely involved in the discussions at key stages along the way.

Background

In November 2000, shortly after the adoption of the EMU, the Giovannini Group, a group of experts convened under the auspices of the European Commission, published a report on public debt issuance in the euro area. The report drew attention to the market fragmentation caused by differences between euro area Member States in debt issuance techniques and instruments and pointed to efficiency gains that could be won.

The Giovannini Group considered four possibilities for the enhancement of liquidity in the euro-denominated government bond market, ranging from greater coordination of sovereign issuance to a single euro area debt instrument.⁴ The 2000 paper reflected a range of views and did not identify a preferred option, but recommended keeping the issue under review over coming years.

Eight years on, there has been limited progress towards greater efficiency in the European government bond market. Although there has been some coordination between issuers and consultation in the setting of bond auction calendars, much could still be done in this area, especially according to investors.⁵ In addition, 2008 has seen welcome moves from some euro area issuers to open up competition between trading platforms in their B2B government bond markets. Notwithstanding these initiatives, many of the possible gains highlighted in 2000 by the Giovannini Group have yet to be achieved. It cannot be said that the European government bond market has significantly narrowed the gap with the US Treasury market⁶ and the passage of time will see the continued rise of major emerging market economies that will compete with European issuers for investors. Moreover, the onset of the market turmoil since the credit crisis of the summer of 2007 has served to highlight the costs of market fragmentation with a significant widening in spreads between European sovereign issues.

Against this backdrop, the 10th anniversary this year of EMU represents a timely opportunity to reflect on the future of EMU, including the European government bond markets. Indeed this was acknowledged by the European Commission when it published in May 2008 its paper to commemorate 10 years of EMU. Noting that the euro area government bond market could be more efficiently integrated, the Commission drew attention to the benefits that stood to be won from further integration (these will be elaborated on in the next section of this paper) and concluded that “it is essential to address any remaining shortcomings in the efficiency of the euro area government bond market.”⁷

... the context for assessing the merits of co-ordinated public debt issuance may change significantly in the coming years. Accordingly, there will be a need to keep the topic under review and...update the analysis presented in this report

- Co-ordinated Public Debt Issuance in the Euro Area, Giovannini Group, November 2000

⁴ These were: (i) coordination on technical aspects of issuance; (ii) creation of a joint debt instrument with several country specific tranches; (iii) creation of a single euro area debt instrument backed by joint guarantees; and (iv) borrowing by a Community institution for on-lending to euro area Member States.

⁵ *The Time Has Come for a Standardized If Not Unified European Government Bond Market* by Matthieu Louanges, June 2007 edition of European Perspectives, published on PIMCO website. <http://europe.pimco.com/LeftNav/Global+Markets/European+Perspectives/2007/Euro+Persp+6-07.htm>

⁶ Persaud examines the differences in depth of liquidity between the EU and US government bond markets and notes that, for European government bonds, “measures of market depth vary from modestly to substantially worse” than equivalent US government bonds on major electronic platforms. *Improving efficiency in the European government bond market*, Avinash D. Persaud of Intelligence Capital on behalf of ICAP.

⁷ Economic and Monetary Union in Europe: 10 Years On, European Commission, May 2008.

Impacts of Common Issuance

Greater Liquidity – Benefits for Issuers and Taxpayers

Fragmented sovereign debt issuance in the euro area can be a source of inefficiency and may be partly responsible for high liquidity premia. The Giovannini Group's paper of 2000 stated that some Member States may believe spreads are not sufficiently large or volatile to cause concern⁸. Although this perception may have been reinforced in recent years by the sustained reduction of spreads to the benchmark and low volatility caused by easy credit, the recent market turmoil should give cause for re-assessment.

The prospect of common issuance creates scope for much larger volume issues and the potential to establish area-wide benchmarks along the yield curve. This could fundamentally reduce the costs of borrowing for Member States and, in turn, the burden on taxpayers. Presently, the liquidity premium is greatest for smaller issuers, and is greater than can be justified by differences in credit rating alone. Indeed, some small issuers with sound economic fundamentals still pay more to service their debt than larger issuers with greater GDP to debt ratios. This has only been further exacerbated by the credit crisis.

Joint issuance would deliver steadier and more predictable supply. In reducing the costs of liquidity management, a problem would be solved for those issuers who presently incur costs arising from the need to retain long term cash positions in order to fund short term gaps when their debt matures (e.g. in the T-bill market). A unified T-bill market could actually build upon the current situation where issuers already trade cash with each other to fund their current cash requirements.

For those Member States running budget surpluses and with a declining total outstanding debt, common issuance could offer a means by which to alleviate the costly need to maintain their own government bond markets and primary dealer systems (and would offer a less costly alternative to bond buy-back operations). For some Member States with smaller funding needs, common issuance could be a more efficient means of servicing those needs. For benchmark issuers - Germany and France - the gains from further integration are said to be more limited than others but still there is the potential for overall liquidity premia benefits for all issuers if the common issuance market could approach the size of the US Treasury market.

However the market survey results published in this paper reveal that the extent of benefits accruing to Member States will depend on the type of common issuance model adopted and the nature and extent of any "guarantee fund" or mechanism by which to ensure debt instruments of the highest possible quality. In the current climate, the market has priced these instruments rather conservatively, largely due to a general backlash by investors against structured products. Moreover, the question for many issuers would be whether any perceived benefits in the reduction of the liquidity premium outweigh the flexibility offered by the current model in managing their own annual funding requirements and issuing to the market according to their needs. Therefore, any structure would likely need to provide some flexibility to Member States to alter the annual funding programme as agreed with the European debt agency in order to meet their own budgetary volatility while at the same time not exceeding their mandated percentage for total annual issuance through the common structure.

Benefits for Dealers

Consolidating euro sovereign bond issuance through one euro issuer would also likely remove the need for DMOs to enforce market making obligations on Primary Dealers. These obligations are aimed at encouraging liquidity in secondary markets and to make debt more attractive to investors. Presently, Primary Dealers are motivated to incur the additional cost of market making by the prospect of the gains received by the preferential treatment offered by issuers, in the form of syndications, derivatives, and auctions. This is a virtuous circle that provides better

⁸ It was noted in the November 2000 paper that euro area spreads had remained below 50 basis points for 10-year maturities and therefore that savings from compression of spreads would be "relatively modest", p.10 *Co-ordinated Public Debt Issuance in the Euro Area - Report of the Giovannini Group*, November 2000.

liquidity for investors thereby lowering the cost to taxpayers. Nevertheless, if market making was not required, it would be expected that some of the savings would be past onto the taxpayer through the lower cost of debt.

Benefits for the Euro, Opportunities for investors

A commonly issued European government bond would better enable Europe to compete with the US Treasury market as the most liquid market globally. Indeed the European Commission's recent paper noted that "fragmentation in supply has meant that the euro-denominated government bond market cannot compete with the corresponding US and Japanese markets in terms of liquidity."⁹

Looking further ahead, European issuers will face greater international competition for investment as the economies of developing (ie, BRIC) countries become stronger and more stable. In particular by creating a consolidated T-bill product, a common European debt instrument could aid the development of the euro as a reserve currency. If commodities and other products were to be priced in euro in world markets, this could permit EMU Members to purchase them and borrow cash at more competitive rates as they would not incur the foreign exchange risk arising from the conversion from dollars.

A highly liquid European government bond would undoubtedly limit the range of Euro-denominated investment products. However, the present situation imposes significant limitations on the effectiveness of the hedge used for European government bonds within Europe as liquidity is focused on a futures contract that is based on the bond of one issuer only, the German bund. The Eurex German bund futures contracts have become the benchmark against which dealers hedge their exposures. For that reason, the liquidity in the secondary market in the wholesale futures segment is much larger than that for the underlying German bund or any other European government bond. This has led observers to claim that the European Government market is actually a "futures market" and not a "cash market". This is also the case for the interest rate swaps market, where activity is even larger than in the futures market. Dunne, Moore and Portes (2006) explain that, unlike the US where Treasury yields represent a coherent underlying cost of borrowing and therefore USD interest rates, euro interest rates are conversely generated in the B2B arena by the swap yield curve.¹⁰

This is problematic for a couple of reasons. To be an effective "hedge", an instrument needs a huge amount of liquidity in order that the "transaction cost" (ie. the spread between the bid and offer) is insignificant. The Eurex bund futures contracts satisfy this requirement as the transaction costs are low. However, the instrument also needs to be correlated closely with the instruments against which it is to be hedged. Since the onset of the credit crisis, this has changed significantly due to the volatility between the spreads of the underlying German bund and the various other euro area European government bonds.

A commonly issued European government bond would likely see the Eurex bund futures contracts replaced by a euro area wide futures contracts based on the underlying common issuance bond. This instrument would have the same liquidity, if not greater, than the current German contract. As the underlying would be the common issuance bond, it would be perfectly correlated and therefore eliminate the risk of volatility between the products, thereby making the new futures contract a much more effective hedge. Also, as the size of the European government cash bonds could reach those similar to the US treasury market, the benchmark issues could reach sufficient liquidity as

An efficient and liquid government bond market is... essential in providing the euro area with a modern and developed financial system providing a risk-free asset class and a benchmark for pricing other higher risk assets.

... is also important in making the euro area an attractive location for investment and in allowing the euro to play the role of international currency

EMU in Europe: 10 Years On, European Commission, May 2008

⁹ *Economic and Monetary Union in Europe: 10 Years On*, European Commission, May 2008, p.104.

¹⁰ The authors quantify the very different shares of cash and futures/swaps activity in the euro area and US markets: €35 billion cash, €280 billion futures plus interest rate swaps; \$200 billion cash, \$275 billion futures plus interest rate swaps. Dunne, P., Moore, M., Portes, R., *European government bond markets: Transparency, liquidity, efficiency*, published by the Centre for Economic Policy Research, (the "CEPR Study"), London, 2006.

to act as hedges for the “off the run” bonds as is seen in the US market. In addition, a commonly issued bond would create possibilities for a larger and more liquid repo market enabling dealers to take short positions more easily and enhancing liquidity in the cash market. Indeed, the cash, repo and futures market could work in a virtuous circle each enhancing the others’ liquidity which would then lower the cost of borrowing in the first instance for all issuers across the euro area.

Depending on the model of common issuance adopted, the number of clashes between issuers’ auction calendars could be significantly reduced. At present, despite some coordination between issuers, dates clashes occur (where more than one euro area issuer holds an auction on the same date) and issues of certain maturities in particular can tend to take place within close time proximity. An example is the issuance of 30 year bonds, where it has been pointed out that between June 2006 and June 2007 more than one third of total issuance in the euro area took place in the first 45 days of 2007.¹¹ A smoother and more efficient calendar for European government bond issuance would be welcomed by investors in particular.

It has been contended that investors and financial intermediaries might see some investment options and arbitrage possibilities reduced following the creation of a common European government bond, as well as the sell side seeing business opportunities reduced through less derivative and syndication advice to governments. However it can be argued that as sub AAA issuers would still need to have significant separate sovereign issuance, this would retain other opportunities for investors, relative value trading for intermediaries/hedge funds, and business opportunities for sell-side firms. Alongside more efficient futures and repo markets, such benefits should greatly outweigh any perceived costs.

Credit quality

One of the first objections to common issuance raised by critics is the difficulty in bringing together issuers of different credit ratings. In order to draw maximum benefits, any common debt instrument should be structured in such a way so as to attract the highest possible credit rating, preferably AAA. The majority of instruments assessed in this paper’s market survey have been devised with this in mind, and following informal consultation with the three major international credit ratings agencies.

Factors singled out by credit ratings agencies as relevant to a credit rating assessment include:

- the existence of an enforceable legal obligation on participating Member States in order to ensure that **common debt is senior to any debt that is issued in their own name** following the introduction of common issuance;
- the existence of an **issuing entity that is free from political interference**;
- that all **issuers are liable for a proportionate share of each maturity**;
- and, where participating issuers carry different credit ratings, the existence of a **liquidity cushion or “guarantee fund”** to ensure sufficient liquidity to meet upcoming bond redemption payments.

In order to attract the highest possible credit ratings, any European debt instrument would need to be senior to any subordinated debt issued by euro area sovereign issuers. However, following the implementation of common issuance, a transition period, in effect, would need to occur during which outstanding sovereign debt would mature or be bought back by issuers. Commonly issued debt could not therefore be expected to realize its full value or credit quality until the end of this transition.

A common debt instrument structure could require participating Member States to pool their funding requirements (to the extent allowed in the structure of each of the six theoretical instruments) through an independent agency, free

¹¹ *The Time Has Come for a Standardized If Not Unified European Government Bond Market* by Matthieu Louanges, June 2007 edition of European Perspectives, published on PIMCO website. <http://europe.pimco.com/LeftNav/Global+Markets/European+Perspectives/2007/Euro+Persp+6-07.htm>

from political interference. The agency would then issue fungible bonds in various maturities to the market. Each Member State could be set a specific percentage of the liability for all bonds correlated to their overall funding requirements.

Of the six theoretical debt instruments developed as part of this project, three incorporate a “guarantee fund” or “liquidity cushion” administered by the issuing agency and of sufficient size to ensure that bond payments would be met in the event of default by a participating issuer or issuers. The guarantee fund structure could in principle be designed to achieve a AAA rating, although the actual rating would depend on the precise details of the fund including its size. The “guarantee fund” envisaged for incorporation into three of the EPDA’s theoretical instruments is elaborated later in the paper and is assumed to support a AAA rating.

Alternatively, it might be possible to limit the percentage of debt that could be issued through the common vehicle by non-AAA issuers, and by subordinating the remainder of their issuance. This might help to ensure that the common bond achieves AAA status by offsetting the probability and duration risk of non-payment to the debt agency by non-AAA issuers. Alternatively, an independent agency could be incorporated that would be “best buyer” for most of the outstanding issuance which could then pool all these assets into a AAA product backed by the underlying independently issued government bonds. In this latter case, governments would still issue independently, with most (if not all in the case of AAA issuers) of their issuance directly purchased by this agency.

Appropriate mechanisms could be incorporated into the structure of the common debt instrument to respond to any credit upgrade or downgrade of a participating sovereign in order that the credit rating of the common bond would not be affected. Taking the example of the guarantee fund, the downgrading of a AAA-rated issuer would require that issuer to advance cash collateral towards the Guarantee Fund.

Sovereign liability

Critics of common issuance maintain that it would breach or undermine the Maastricht Treaty’s “no bail-out clause” which is a cornerstone of the creation of the EMU. Whether this is the case or not would depend entirely on the model of common issuance adopted. Were Member States severally - and not jointly - liable for their debt then there would be no inconsistency with the bail-out clause¹² All six of the common debt instruments developed for our market survey provide for the several liability of the participants. In other words, no issuer would be liable for another’s debt obligations. A number of existing models for commonly issued debt are based on several liability, including bonds issued by the German Länder (a summary of which is also included in the paper attached at Appendix C).

Budget Discipline

It has been said that the pricing in the market of debt issued by each sovereign issuer provides a measure of discipline for the Growth and Stability Pact. Were a common debt instrument to co-exist in parallel with continued separate sovereign issuance by each EMU Member, then the common instrument could provide a further useful signaling tool against which to measure Member States’ budget performances.

On closer inspection... it is clear that the market could be more efficiently integrated – particularly from the supply side.

...possibilities for deeper financial integration can be exploited to amplify the growth dividend for euro area Member States, to underpin the euro as a global currency, to deliver a more efficient transmission of monetary policy and to facilitate the management of asymmetric shocks via enhanced opportunities risk sharing.

EMU in Europe: 10 Years On,
 European Commission, May 2008

¹² The Giovannini Group acknowledged in its 2000 paper that a joint instrument underpinned by the *several* guarantees of the participants could be agreed outside the framework of the Treaty and require no change either in Community legislation or institutional infrastructure.

Political sensitivities

Sceptics of common issuance point out that coordination involving a joint or single debt instrument may not be a practical option for the Euro area as a whole because Member States are likely to oppose any erosion of sovereignty in fiscal matters. However just as EU Member States a decade ago passed over monetary policy setting to the ECB, evidence would need to be shown of clear benefits.

Market Survey

Development of Theoretical Debt Instruments

The theoretical instruments were developed in informal consultation with the three major international credit rating agencies, academics and the EPDA members themselves. The range of theoretical debt instruments was intended to reflect variations on the following factors, examined in further detail below:

- Participation of all 15 euro area issuers or participation of some issuers only
- Total annual sovereign bond issuance or 50% annual issuance or T-Bill only.
- A mechanism, namely a “Guarantee Fund”, to ensure payments met in event of an issuer default, and therefore to raise the credit quality of the bond.

All issuers versus some issuers

The six theoretical instruments range from options which include all 15 euro area issuers to an option with 12 issuers (excluding the three largest issuers: Italy, Germany and France) and one which includes the smaller to medium size AAA-rated issuers (Belgium, Finland, Ireland, Luxembourg, Netherlands and Spain).

Total annual issuance versus 50% of annual issuance or a T-Bill only

Those options which included issuer’s total annual issuance were expected to deliver the greatest reduction in liquidity premia. On the other hand, one option which limited an issuer’s total issuance in the common bond to 50% of its annual issuance was intended not only to serve as a contrast but also to provide a means by which to separate out credit risk from the common bond. A final option, for a T-Bill only, combined all T-Bill issuance for the 15 issuers.

A mechanism, namely a “Guarantee Fund”, to help ensure AAA credit ratings

Given the range of credit ratings reflected by the 15 EMU Members, and the desirability of ensuring the highest quality common instruments possible, we sought a mechanism by which to reduce credit risk. After consulting informally with the three major international credit ratings agencies, we decided upon a “Guarantee Fund” to be administered by an independent issuing agency in order to ensure sufficient liquidity to meet upcoming bond redemption payments. Precedents for this type of structure include the International Financing Facility for Immunisation and Nordic Municipal Bonds, both of which are elaborated in a paper attached at Appendix C. The guarantee fund incorporated into theoretical bond options II-VI would be established with contributions from non AAA-rated participating issues.

As noted above, there are other possible structures such as: (i) a cap on the proportion of debt based on some objective criteria that a non AAA-rated issuer could issue via the common structure; or (ii) an independent euro area-wide debt agency that would act as “best buyer” for bonds issued by member states and then packaged into a AAA bond which would be sold onto the market.

Several Liability of Participating Issuers

One factor that remains constant for all of the six theoretical instruments, however, is the several guarantees of the participating sovereign issuers. The six instruments are therefore all variations on the second of the four proposals developed by the Giovannini Group in 2000¹³ In other words, the instruments go further than enhanced cooperation between issuers but – consistent with the EU’s Maastricht Treaty, stop short of a joint instrument underpinned by joint guarantees.

¹³ The 6 instruments can therefore be seen as variations on the second option considered by the Giovannini Group in 2000: “creation of a joint debt instrument with several country-specific tranches”.

Basic Characteristics of Theoretical Common Debt Instruments

We established some basic characteristics common to all of the theoretical instruments in order to facilitate their pricing. These include, in each case:

- **Volume of issuance:** The volume of total annual issuance and total outstanding government debt securities for the participating issuers have been drawn from 2006 data published by the Economic and Financial Committee's Sub-Committee on EU Government Bonds and Bills Markets (otherwise known as the Thomsen Group) on the European Commission's ECOFIN website¹⁴. This data has been attached to this paper as Appendices A and B.
- **Credit rating:** A credit rating for each instrument has been estimated by reference to the credit ratings of participating issuers and the conditions attached to the particular bond, eg the "Guarantee Fund". We note that the major ratings agencies have been consulted in this work, although the ratings assigned to each of the EPDA's theoretical bond carry no official endorsement.
- **Issuance calendar:** The same basic issuance calendar has been used for each of the five theoretical bonds. The issuance calendar comprises instruments of the following maturities: 6 months, 2 years, 5 years, 10 years, 15 years and 30 years. Total annual issuance has been allocated to each of these maturities as set out in the table below. This allocation reflects an approximation of the allocations made by the largest issuers: France, Germany, Italy and also the United States. The latter has been included as a reference because the overall size of annual issuance in this bond would be comparable with annual US Treasury issuance.

Maturity	% Allocation of Annual Issuance
6 months	50%
2 years	15%
5 years	15%
10 years	12%
15 years	5%
30 years	3%
TOTAL	100%

Assumptions for Pricing the Theoretical Common Bonds

In addition to the characteristic of the theoretical bonds described above, participating Primary Dealers were asked to take the following assumptions into account in pricing the theoretical debt instruments.

- **No Political constraints:** Assume that each of the six Common Bonds is politically possible.
- **Fungible Common Instruments and Structure:** Each common bond structure would require the member states to pool their funding requirements (to the extent allowed in the structure of the 6 theoretical instruments) through an independent agency, which would then issue fungible bonds in various maturities to the market. Each Member State would be set a specific

¹⁴ Data on total debt securities outstanding for all 27 EU Member States can be found at:

http://ec.europa.eu/economy_finance/efc/documents/market_table_i.pdf

Data on gross and net annual issuance for each of the 27 EU Member States can be found at:

http://ec.europa.eu/economy_finance/efc/documents/market_table_ii_a.pdf

percentage of the liability for all bonds correlated to their overall funding requirements.

- **Transition phases complete:** Assume that any transition phase required in order to fully implement the common bond would have lapsed and that all existing outstanding debt securities issued by euro area sovereigns will have matured or been bought back.
- **Sovereign credit rating changes:** It is assumed that in the event of a credit upgrade or downgrade of any participating sovereigns, the credit rating of the common bond would not be affected as appropriate mechanisms will be incorporated into the structure to take care of such eventualities. Any credit downgrading would have implications for the Guarantee Fund which is incorporated into options II-VI (see below). The downgrading of a AAA-rated issuer would require that issuer to advance cash collateral towards the Guarantee Fund, and the downgrading of a non AAA-rated issuer would likely lift the level of cash collateral it is required to advance to the Guarantee Fund.
- **Independent debt agency:** Assume that an independent debt agency would issue the common bonds. This agency would be free of any political influence (such as in the case of the ECB's responsibility for the euro).
- **Independent legally binding obligations:** Legally binding payment obligations would be established between the participating sovereign issuers and the independent debt agency or institution based on pledges of tax receipts and where applicable the establishment of a "guarantee fund". Assume that it would not be politically, legally or fiscally possible for a member state to choose to pay its subordinated debt first if it was to default against the senior common issuance part.
- **"Guarantee Fund":** For options, II-VI, the "guarantee fund" or "liquidity cushion" (administered by the issuing agency) would be of sufficient size in order to ensure that bond payments were met in the event of default by a participating issuer or issuers. The costs of this fund would be met by participating non AAA-rated issuers who would be required to put up cash collateral in advance in order to satisfy payments by the agency. The contributions of these issuers would be based on an objective formula (eg, related to their credit rating and possibly their CDS spreads to the common bond). Raising such collateral would likely require these issuers to issue subordinated debt in the market in order to satisfy all or part of their cash collateral requirements.
- **"Repo Market":** Assume the existence of a highly liquid repo market, as the common bond will replace the various European Government Bonds as the repo instrument of choice.
- **"Futures Market":** Assume, at least for those Options which incorporate Germany in the common bond (Options I-III and VI), a highly liquid common bond futures contract that will replace Eurex bund futures. For Options IV and V, assume a highly liquid futures market based on the common bond.

Pricing Methodology

Participating Primary Dealers were asked to price the theoretical debt instruments according to the following methodology:

- **Best Price Estimate:** Dealers were asked to provide their best estimate of a price for each of the six theoretical Common Bonds described below and for each maturity (6 months, 2 years, 5

years, 10 years, 15 years and 30 years, as applicable).

- **Reference Price:** The benchmark/reference price for pricing the Common Bonds was the swap curve, eg two year fixed rate note versus three month LIBOR Euro floating rate.
- **Bonds priced on same date:** Dealers priced the bonds against the swap curve at the end of the trading day on Monday 23 June 2008. Dealers were asked to insert into the spreadsheet attached at Appendix C the prices for each bond at each maturity.
- **Subordinated Debt:** Dealers were asked not to price the subordinated debt issued separately in the name of individual sovereigns where this is issued outside of the common bond (eg, in order to meet their contributions to the “guarantee fund” or as is the case for Option III).
- **Average Price:** Having received pricing responses from the 13 participating Primary Dealers, the two highest and lowest prices were discarded and an average price was set from the nine remaining prices (similar to the way in which EURIBOR is calculated). The table at page 41 records each of the 13 price responses on an anonymous basis and also calculates average prices for all 13 responses and for 11 responses (after discarding the single highest and lowest prices).

OPTION I

A bond issued by all 15 euro area sovereign issuers and comprising their total annual debt issuance

Description

- This bond would comprise the total annual issuance of each of the current euro area sovereign issuers. This would ensure the maximum liquidity possible.
- The common bond would make redundant further issuance by individual sovereign issuers.

Structure

- All 15 euro area sovereign issuers would draw 100% of their annual debt issuance from the common bond.
- The 15 sovereign issuers would be severally liable for repayment of the common bond, thereby complying with the terms of the EU's Maastricht Treaty.

Volume of Annual Issuance: €1,474 billion

Total Government debt securities outstanding: €4,426 billion

- Of the six models under examination, this bond (along with Option II) would constitute the largest issuance. Combined total annual issuance in 2006 of the 15 euro area sovereign issuers constituted €1,474 billion¹⁵
- This bond would therefore amount to over six times the 2006 annual issuance of Germany and nearly four times the 2006 annual issuance of Italy.
- The combined Government debt securities outstanding in the 15 euro area Members in 2006 was €4,426,000 billion. This bond's annual issuance therefore represents almost precisely 1/3 of total debt outstanding.

¹⁵ Website of the Economic and Financial Committee on EU Government Bonds and Bills Markets:

http://ec.europa.eu/economy_finance/efc/documents/market_table_ii_a.pdf

This total figure includes debt issued by Cyprus (€1.883 billion) and Malta €1.016 billion) which were not members of the EMU in 2006.

	Issuer	2006 Total Outstanding Debt in Government Securities	Annual Issuance in Common Bond Option I	
AAA-RATED	Austria	€145.27	€22,493	
	Finland	€58.90	€12,200	
	France	€876.60	€285,557	
	Germany	€916.56	€234,000	
	Ireland	€35.92	€0	
	Luxembourg	€0.094	€0	
	Netherlands	€210.04	€81,139	
	Spain	€312.46	€56,462	
		SUB-TOTAL (AAA)	€2,555.84	€691.85
NON AAA-RATED	Belgium	€278.60	€331,708	
	Cyprus	€13.01	€1,883	
	Greece	€204.28	€31,210	
	Italy	€1,256.95	€388,409	
	Malta	€2.99	€1,016	
	Portugal	€108.56	€25,788	
	Slovenia	€6.19	€1,824	
		SUB-TOTAL (NON-AAA)	€1,870.58	€781.84
		TOTAL	€4,426.40 bn	€1,473.69 bn

Theoretical Credit Rating: A/A/A1

- Based on advice from international credit ratings agencies, the rating of this instrument would likely be that of the lowest rated participating issuer (Greece) and therefore A/A/A1. Nearly half (47%) of this bond's total issuance would derive from the eight AAA rated sovereign issuers within the euro area¹⁶ with Italy accounting for half of remaining issuance.

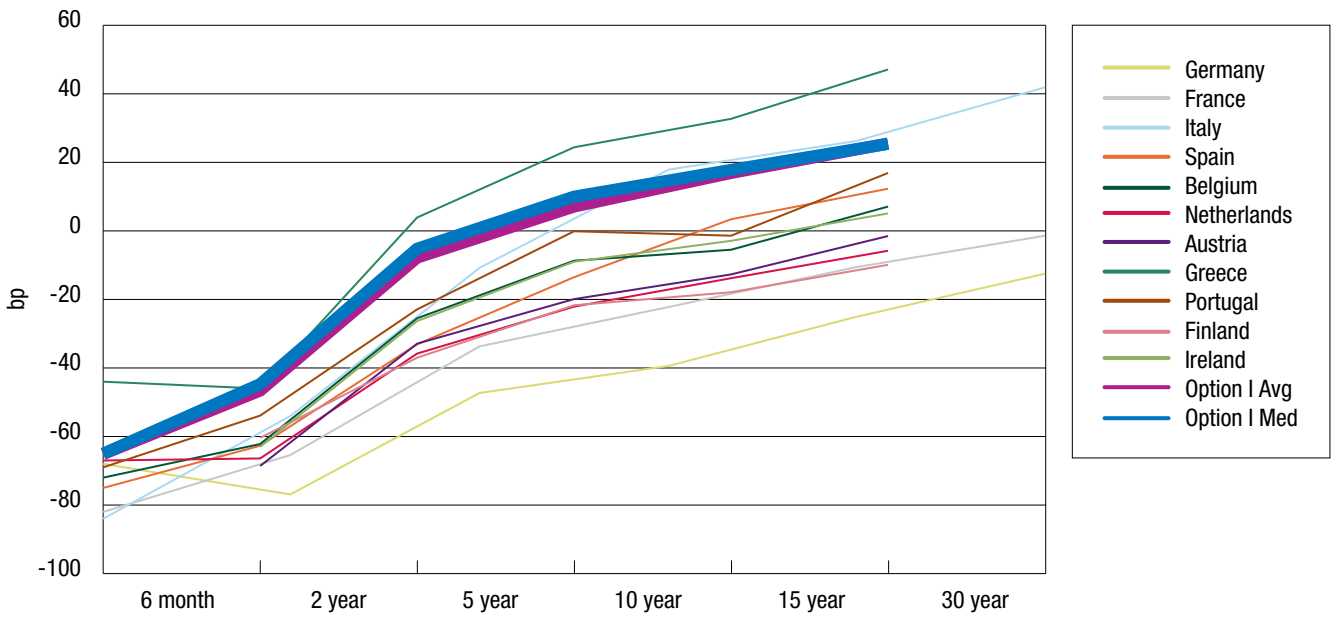
Issuance Calendar

Maturity	Number Of Issues Per Calendar Year	Volume Per Issue	Total Annual Volume
6 months	26 (fortnightly)	€28.35	€737
2 years	12 (monthly)	€18.43	€221.10
5 years	12 (monthly)	€18.43	€221.10
10 years	12 (monthly)	€18.43	€176.88
15 years	6 (twice quarterly)	€12.28	€73.70
30 years	4 (quarterly)	€11.05	€44.22
TOTAL			€1,474 bn

¹⁶ This is based on ratings awarded by the three major international agencies, Fitch, Moody's and Standard & Poors. Each of these agencies rates the following Member States as AAA: Austria, Finland, France, Germany, Ireland, Luxembourg, Netherlands and Spain.

Market Survey Result

Option I



- With the lowest credit rating of the six options, Option I was the least competitively priced

OPTION II

A bond issued by all 15 euro area sovereign issuers, comprising their total annual debt issuance, and with a “guarantee fund” administered by the issuing agency

Description

- While Option I ensures maximum liquidity for a common European Government bond, it would not attract a AAA credit rating. In order to structure a bond that brings together all euro area sovereign issuers, yet which could attract a AAA rating, this bond incorporates a “guarantee fund” to ensure that upcoming bond payments are met.

Structure

- As with Option (I), all 15 euro area sovereign issuers draw 100% of their annual debt issuance from the common bond.
- The 15 sovereign issuers would be severally liable for repayment of the common bond, thereby not jeopardizing the “Growth and Stability Pact”.
- A “Guarantee fund” would be administered by the issuing agency, the purpose of which would be to satisfy credit ratings agencies that short term payments could be met.

Volume of Annual Issuance: €1,474 billion

Total Government debt securities outstanding: €4,426 billion

- As for Option (I) above.

Theoretical Credit Rating: AAA

- The rating of this instrument would be AAA. Although over half (53%) of this bond’s total issuance would derive from the seven non AAA-rated sovereign issuers, the existence of the “guarantee fund” would ensure a AAA rating.¹⁷

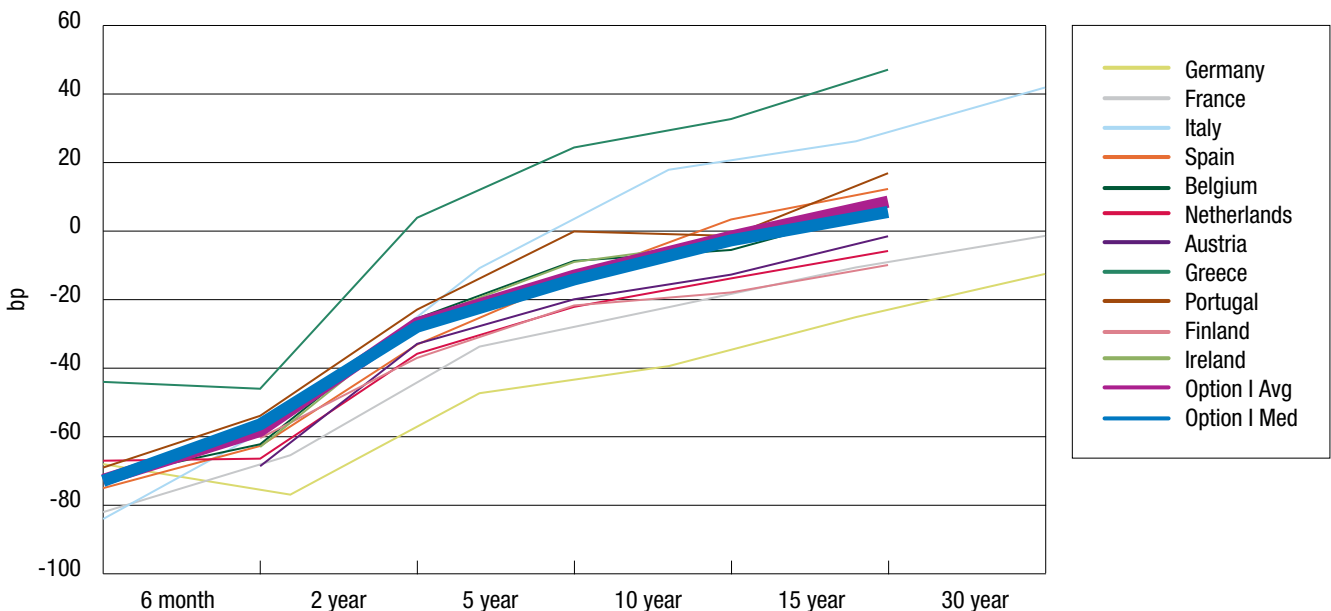
¹⁷ The International Financing Facility Immunisation bond is an example of a bond that maintains a AAA rating despite the participation of non AAA-rated issuers.

Issuance Calendar

Maturity	Number Of Issues Per Calendar Year	Volume Per Issue	Total Annual Volume
6 months	26 (fortnightly)	€28.35	€737
2 years	12 (monthly)	€18.43	€221.10
5 years	12 (monthly)	€18.43	€221.10
10 years	12 (monthly)	€18.43	€176.88
15 years	6 (twice quarterly)	€12.28	€73.70
30 years	4 (quarterly)	€11.05	€44.22
TOTAL			€1,474 bn

Market Survey Result

Option II



- The only difference from Option I is the inclusion here of the Guarantee Fund, which justifies the AAA rating of the Option II instrument.
- The difference in price with Option I should therefore represent purely a credit spread: 7.5 b.p at the short end of the curve (6M Bill) and 24.4 b.p at the long end (30 yr bond).
- Despite the price advantage conferred by the Guarantee Fund, feedback from participating dealers suggests that they “doubt” the effect of the Fund, especially in volatile conditions such as exist at present.

OPTION III

A bond issued by all 15 euro area sovereign issuers comprising 50% of each issuer's total annual debt issuance and with a "guarantee fund" administered by the issuing agency. Sovereign issuers would issue in their own name the remainder of their annual volumes

Description

- This bond differs from the first two Options in that it would comprise half of each issuer's total annual debt issuance, with all issuers therefore having the flexibility to continue to issue debt in their own names.
- This bond requires that the common European bond is senior to debt issued individually by each sovereign. In this way, Option II is best able to separate out liquidity risk from credit risk, with the latter focused on the subordinated debt issued individually by non AAA-rated issuers outside of the common bond.

Structure

- All 15 euro area sovereign issuers would draw a maximum of 50% of their annual debt issuance from the common bond.
- The 15 sovereign issuers would be severally liable for repayment of the common bond, thereby not jeopardizing the "Growth and Stability Pact".
- A "Guarantee fund" would be administered by the issuing agency, the purpose of which would be to satisfy credit ratings agencies that short term payments could be met.
- As this bond would exist in parallel with sovereign bonds issued at the national level, it would be necessary to guarantee that this bond would assume seniority over any new debt issuance at the national level. (The common bond would be subordinate to current outstanding debt, however, until that debt matures.)

Volume of Annual Issuance: €737 bn

Total Government debt securities outstanding: €2,123 bn

- Of the six models under examination, this bond would constitute the fourth largest issuance.
- By comprising half of each issuer's total annual debt issuance, this bond would amount to half the issuance size of Option I, however it would still amount to more than the combined annual issuance of France and Germany.

	Issuer	2006 Total Outstanding Debt in Government Securities	Annual Issuance in Common Bond Option III (50% Of 2006 Annual Issuance)	
AAA-RATED	Austria	€145.27	€11.25	
	Finland	€58.90	€6.10	
	France	€876.60	€142.78	
	Germany	€916.56	€117.00	
	Ireland	€35.92	€0	
	Luxembourg	€0.094	€0	
	Netherlands	€210.04	€40.57	
	Spain	€312.46	€28.23	
	SUB-TOTAL (AAA)		€2,556 bn	€345.9 bn
	NON AAA-RATED	Belgium	€278.60	€165.85
Cyprus		€13.01	€0.94	
Greece		€204.28	€15.60	
Italy		€1,256.95	€194.20	
Malta		€2.99	€0.51	
Portugal		€108.56	€12.89	
Slovenia		€6.19	€0.91	
SUB-TOTAL (NON-AAA)		€1,870.58	€390.90	
TOTAL:		€4,426 bn	€737 bn	

Theoretical Credit Rating: AAA

- As with Option II above, the rating of this instrument would be AAA. Although over half (53%) of this bond's total issuance would derive from the seven non AAA-rated sovereign issuers, the existence of the "guarantee fund" would ensure a AAA rating.¹⁸

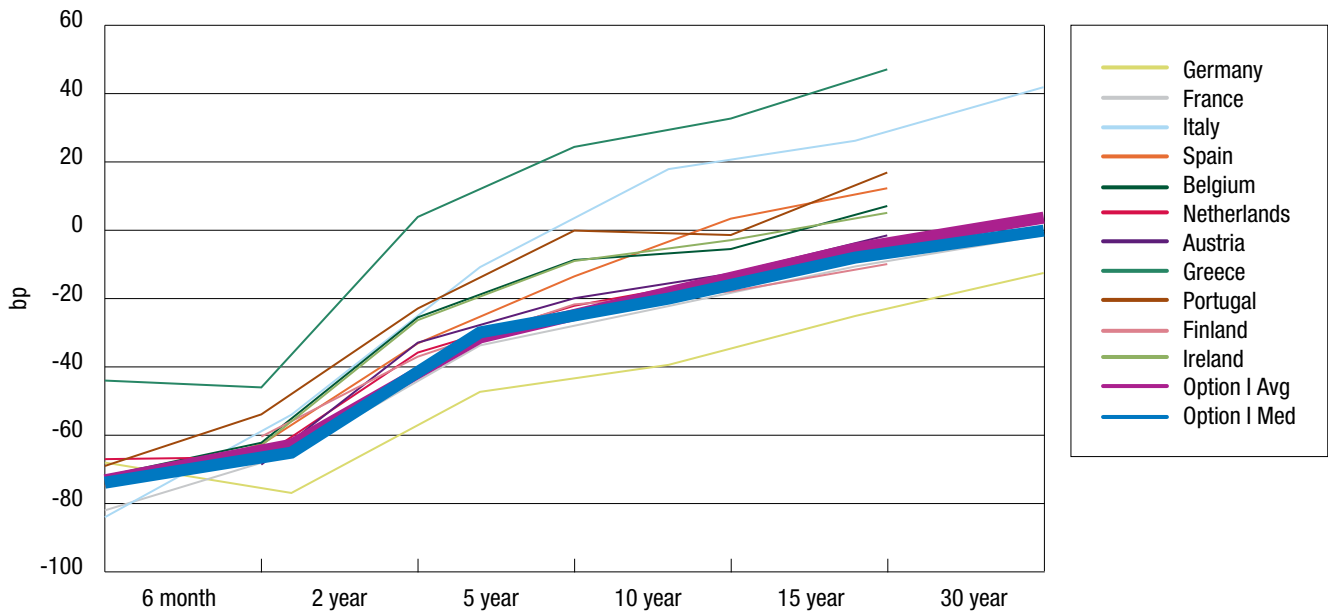
Issuance Calendar

Maturity	Number Of Issues Per Calendar Year	Volume Per Issue	Volume
6 months	12	€30.71	€368.50
2 years	6	€18.43	€110.55
5 years	6	€18.43	€110.55
10 years	6	€14.74	€88.44
15 years	2	€18.43	€36.85
30 years	2	€11.06	€22.11
TOTAL			€737 bn

¹⁸ The International Financing Facility Immunisation bond is an example of a bond that maintains a AAA rating despite the participation of non AAA-rated issuers.

Market Survey Result

Option III



- Despite the fact that Option III's volume of issuance is 50% of Option II, it is still priced similarly.
- Some participating dealers appeared to take account of the probability that credit risk would attach to issuers' subordinated debt.
- In order to assess more comprehensively this Option, issuers' subordinated debt would need to be priced.

OPTION IV

A bond issued by the 12 small and medium size euro area sovereign issuers (ie, excluding France, Germany and Italy) and comprising their total annual debt issuance

Description

- This bond would be identical to Option II except that it would exclude from its coverage the largest three euro area sovereign issuers France, Germany and Italy.

Structure

- The 12 participating euro area sovereign issuers would draw all of their annual debt issuance from the common bond.
- The 12 sovereign issuers would be severally liable for repayment of the common bond, thereby not jeopardizing the “Growth and Stability Pact”.
- A “Guarantee fund” would be administered by the issuing agency, the purpose of which would be to satisfy credit ratings agencies that short term payments could be met.
- The common bond would be senior to all sovereign debt upon the maturity of current outstanding debt issued by the 12 sovereign issuers.

Volume of Annual Issuance: €566 bn

Total Government debt securities outstanding: €1,376 bn

- Of the six models under examination, this bond would constitute the fifth largest issuance of the four options, with a volume greater than the total annual debt issued by France and Germany in 2006.

	Issuer	2006 Total Outstanding Debt in Government Securities	Annual Issuance in Common Bond Option I
AAA-RATED	Austria	€145.27	€22.49
	Finland	€58.90	€12.20
	Ireland	€35.92	€0
	Luxembourg	€0.094	€0
	Netherlands	€210.04	€81.14
	Spain	€312.46	€56.46
	SUB-TOTAL (AAA)		€762.68
NON AAA-RATED	Belgium	€278.60	€331.71
	Cyprus	€13.01	€1.88
	Greece	€204.28	€31.21
	Malta	€2.99	€1.02
	Portugal	€108.56	€25.79
	Slovenia	€6.19	€1.82
	SUB-TOTAL (NON-AAA)		€613.63
	TOTAL	€1,376 bn	€566 bn

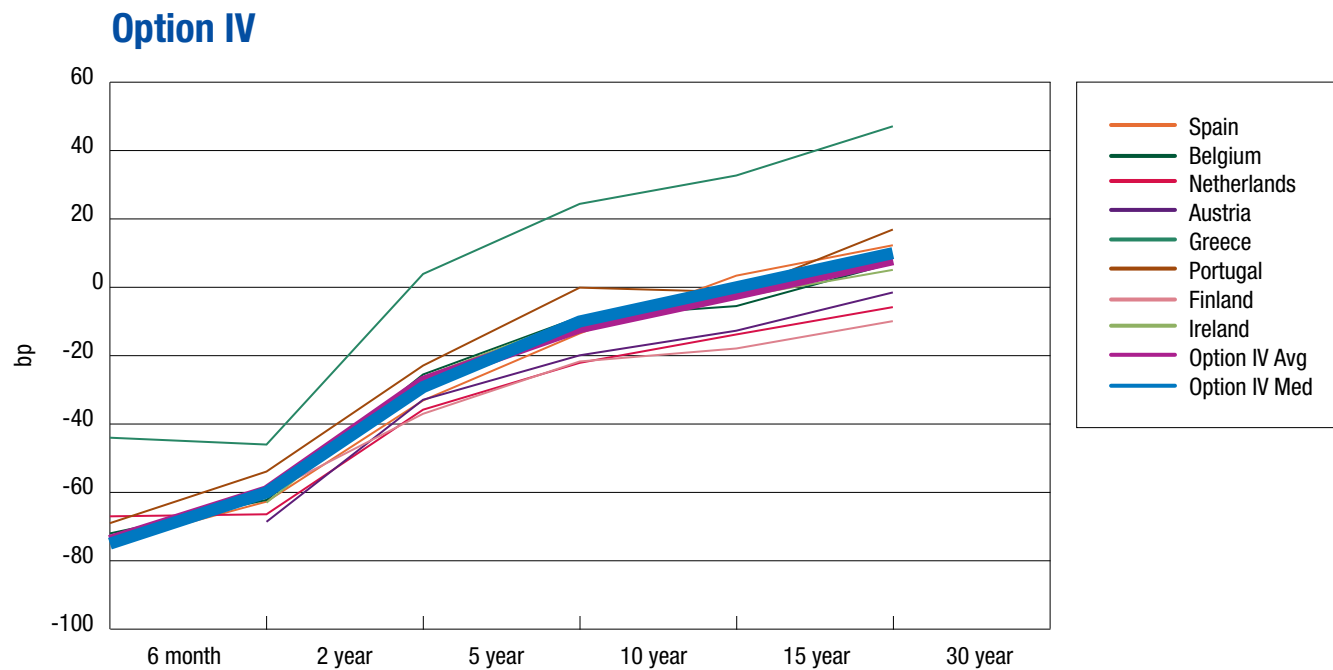
Theoretical Credit Rating: AAA

30% of the bond’s total issuance would derive from the six AAA-rated sovereign issuers, with Belgium accounting for the great majority of remaining issuance. The existence of the “guarantee fund” would ensure a AAA rating

Issuance Calendar

Maturity	Number Of Issues Per Calendar Year	Volume Per Issue	Volume
6 months	12 (monthly)	€23.58	€283
2 years	6 (each two months)	€14.15	€84.90
5 years	6 (each two months)	€14.15	€84.90
10 years	4 (quarterly)	€16.80	€67.92
15 years	2 (each six months)	€14.15	€28.30
30 years	1 (annually)	€16.98	€16.98
TOTAL			€566 bn

Market Survey Result



- Option IV does not approach the pricing of the best issues
- Weaknesses include its likely lesser liquidity, due to the absence of the three largest issuers (Italy, Germany and France)

OPTION V

A bond issued by AAA-rated euro area sovereign issuers excluding France and Germany and comprising their total annual debt issuance

Description

- This bond would include the six smaller to medium size AAA-rated issuers: Austria, Finland, Ireland, Luxembourg, Netherlands and Spain.

Structure

- The 6 participating euro area sovereign issuers would draw all of their annual debt issuance from the common bond.
- The 6 sovereign issuers would be severally liable for repayment of the common bond, thereby not jeopardizing the “Growth and Stability Pact”.
- As all participating issuers are AAA-rated, there would be no need for a “guarantee fund”.
- The common bond would be senior to all sovereign debt upon the maturity of current outstanding debt issued by the 12 sovereign issuers.

Volume of Annual Issuance: €173 bn

Total Government debt securities outstanding: €763 bn

- Of the six models under examination, this bond would constitute easily the smallest issuance of all the options. Although much smaller in volume than the annual issuance of the three largest euro area sovereigns (France, Germany, and Italy) the annual issuance of the bond would be over twice the annual issuance of its largest participating issuer, the Netherlands, and over three times the annual issuance of its second largest issuer, Spain.

AAA-Rated Issuer	2006 Total Outstanding Debt in Government Securities	2006 Annual Issuance
Austria	€145.27	€22.49
Finland	€58.90	€12.20
Ireland	€35.92	€0
Luxembourg	€0.094	€0
Netherlands	€210.04	€81.14
Spain	€312.46	€56.46
TOTAL	€763 bn	€173.69 bn

Theoretical Credit Rating: AAA

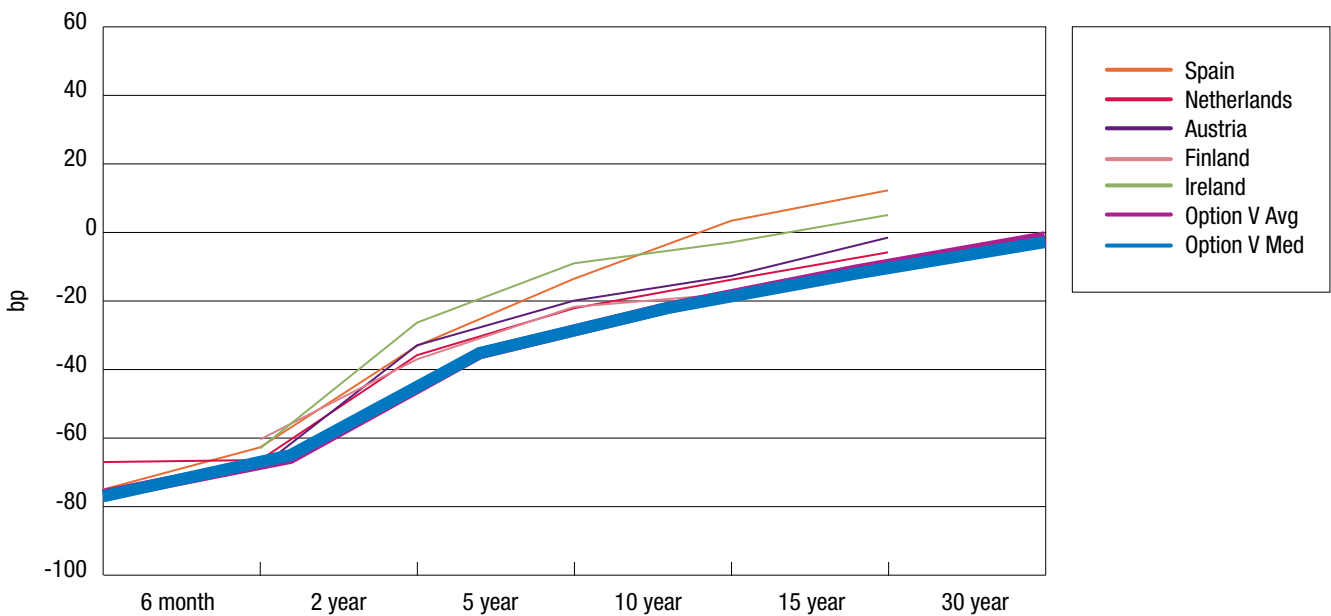
- As all participating issuers are rated AAA, this bond would carry a AAA credit rating.

Issuance Calendar

Maturity	Number Of Issues Per Calendar Year	Volume Per Issue	Volume
2 years	2 (each six months)	€12.98	€25.95
5 years	4 (each six months)	€12.98	€25.95
10 years	2 (each six months)	€10.38	€20.76
15 years	1 (annually)	€8.65	€8.65
30 years	1 (annually)	€5.19	€5.19
TOTAL			€173 bn

Market Survey Result

Option V



- Option V is one of the most competitively priced of the Options.
- Most marked savings for Spain and Ireland, with savings for other participating issuers at short end of curve.
- As all issuers are “AAA”, there is no need for a Guarantee Fund.
- A ‘AAA’ issue could enhance the liquidity of the countries in that bond, especially as they are currently small issuers with limited (normally predominantly domestic) demand. Having the issuance grouped together would open up the market for more participant interest.

OPTION VI

A 6 month Treasury Bill issued by all 15 euro area sovereign issuers, comprising their total annual issuance for Bills of less than one year maturity

Description

- This bond would comprise the total annual issuance for Bills of less than one year maturity of each of the current euro area sovereign issuers.
- The common bond would make redundant further issuance of Treasury Bills by individual sovereign issuers.

Structure

- All 15 euro area sovereign issuers draw 100% of their annual T-Bill issuance from the common T-Bill
- The 15 sovereign issuers would be severally liable for repayment of the common T-Bill, thereby complying with the terms of the “Growth and Stability Pact”.

Volume of Annual Issuance: €849 billion

- Of the six models under examination, this bond would constitute the third largest issuance, despite being for T-Bills only.
- The total annual volume of this instrument would constitute 57% of total annual issuance in 2006 by euro area issuers.
- Annual issuance in this T-Bill would be comparable with annual T-Bill issuance by the US Treasury.

Higher Rated Issuers (Short Term Debt Credit Rating)	Issuer	2006 Total Outstanding Debt In Government Securities	Annual Issuance Of Bills Less Than One Year Maturity
A-1+/P-1/F1+.1 ¹⁸	Austria	€145.27	€1.102
A-1+/P-1/F1+	Finland	€58.90	€5.685
A-1+/P-1/F1+	France	€876.60	€164.481
A-1+/P-1/F1+	Germany	€916.56	€72.540
A-1+/P-1/F1+.	Ireland	€35.920	€0
A-1+/P-1/F1+	Luxembourg	€0.94	€0
A-1+/P-1/F1+.	Netherlands	€210.04	€57.933
A-1+/P-1/F1+	Spain	€312.46	€11.405
A-1+/P-1/F1+	Belgium	€278.60	€309.152
A-1+/P-1/F1+	Cyprus	€13.01	€0.710
A-1+/P-1/F1+	Italy	€1,256.95	€210.518
A-1+/P-1/F1+	Portugal	€108.56	€11.888
A-1+/P-1/F1+	Slovenia	€6.19	€0.700
LOWER RATED ISSUERS			
A-1/P-1/F1	Greece	€204.28	€1.997
A-1/P-1/F1	Malta	€2.99	€0.909
	TOTAL:	€4,426 bn	€849 bn

Theoretical Credit Rating:

- 13 of the 15 euro area issuers carry the highest possible short term credit ratings from the major ratings agencies. Malta carries the highest possible short term rating from two of the agencies and Greece carries the highest possible short term rating from one of the three agencies. Together these two issuers would account for less than 3.5% of total issuance. There would therefore be a strong case for this 6 month Bill attracting the highest possible credit rating, even without the support of a “guarantee fund”.

Issuance Calendar

Maturity	Number Of Issues Per Calendar Year	Volume Per Issue	Volume
6 months	52 (weekly)	€16.33	€849.022
TOTAL			€849.022 bn

Market Survey Result

6M T-Bill	Spread to Swap
Germany	-0.68
France	-0.82
Italy	-0.84
Spain	-0.75
Belgium	-0.72
Netherlands	-0.67
Austria	n/a
Greece	-0.44
Portugal	-0.69
Finland	n/a
Ireland	n/a
Option VI	-0.78

- Dealer feedback acknowledged that investors need to be comfortable with a common debt instrument especially with the size in today's volatile market

¹⁸ These are ratings assigned respectively by Fitch, Standard & Poor's and Moody's.

Market Survey Responses – Pricing Table

Avg	Med	Less Highest/Lowest					Less Two Highest/Lowest					13							
		STD DEV	Highest	Lowest	Avg	Med	2nd High	2nd Low	Avg	Med									
OPTION																			
-70.4	-70.0	6.1	-60.0	-79.9	-70.4	-70.0	-78.0	-70.3	-70.0	-75.0	-78.0	-79.9	-66.0	-70.0	-65.0	-60.0	-65.0	-72.50	
-51.9	-50.0	10.8	-32.5	-71.0	-51.9	-50.0	-40.00	-40.4	-50.0	-71.0	-63.5	-57.0	-56.0	-50.0	-40.0	-50.0	-32.5	-45.0	-63.83
-14.6	-10.3	12.7	0.0	-44.0	-13.2	-10.3	0.0	-10.3	-10.0	-44.0	-28.5	-29.0	-14.4	0.0	-5.0	0.0	-15.0	-18.07	
0.0	5.0	12.4	15.0	-31.5	1.5	5.0	10.0	-0.2	0.0	-31.5	-12.5	-11.3	5.2	10.0	15.0	8.5	5.0	-3.07	
11.0	12.8	13.4	30.0	-20.5	12.1	12.8	30.0	12.8	15.0	-20.5	1.5	-3.2	14.6	15.0	30.0	11.0	20.0	9.84	
21.4	20.5	14.4	45.0	-7.5	21.9	20.5	45.0	20.5	25.0	-7.5	11.5	10.0	28.1	20.0	45.0	20.5	30.0	10.35	

OPTION II																			
-77.7	-78.0	5.1	-70.0	-90.0	-77.3	-78.0	-71.4	-71.4	-90.0	-78.0	-80.0	-79.8	-76.4	-80.0	-70.0	-80.0	-72.5	-78.0	-74.50
-63.4	-61.7	11.9	-43.2	-80.0	-63.7	-61.7	-50.0	-43.2	-60.0	-78.0	-78.0	-57.1	-66.4	-70.0	-50.0	-80.0	-57.5	-50.0	-72.33
-32.4	-33.0	11.7	-12.7	-51.0	-32.5	-33.0	-20.0	-12.7	-20.0	-51.0	-46.5	-29.4	-33.0	-30.0	-25.0	-50.0	-35.0	-20.0	-33.07
-19.0	-19.1	13.1	0.0	-40.5	-18.7	-19.1	-3.8	-40.0	-10.0	-40.5	-32.5	-11.6	-19.1	-20.0	-5.0	-40.0	-23.5	0.0	-18.07
-6.3	-7.7	12.7	15.0	-26.5	-6.3	-7.7	10.0	7.6	15.0	-26.5	-18.5	-2.5	-7.7	-10.0	5.0	-20.0	-12.5	10.0	-5.16
3.7	0.7	11.9	20.0	-15.0	3.9	0.7	20.0	17.7	20.0	-10.5	-6.5	10.7	3.8	0.0	15.0	-15.0	0.7	20.0	-4.65

OPTION III																			
-78.5	-79.0	5.6	-67.5	-90.0	-78.5	-79.0	-73.0	-75.3	-90.0	-77.0	-79.0	-79.8	-80.5	-85.0	-73.0	-80.0	-67.5	-76.0	-75.50
-65.6	-70.5	12.9	-37.5	-80.0	-66.8	-70.5	-45.2	-45.2	-70.0	-73.0	-73.0	-57.1	-70.5	-75.0	-60.0	-80.0	-37.5	-60.0	-74.83
-36.1	-35.0	9.6	-14.7	-50.0	-36.7	-35.0	-27.5	-14.7	-30.0	-47.0	-40.5	-29.5	-39.4	-35.0	-35.0	-50.0	-27.5	-35.0	-37.07
-22.7	-25.0	11.6	-2.5	-40.0	-23.0	-25.0	-5.8	-3.9	-20.0	-33.5	-27.5	-11.6	-29.0	-25.0	-15.0	-40.0	-2.5	-25.0	-22.07
-9.5	-13.0	9.3	5.8	-20.5	-9.9	-13.0	5.0	5.8	-5.0	-20.5	-13.0	-2.4	-16.3	-15.0	0.0	-20.0	5.0	-15.0	-9.16
-0.9	-5.0	9.4	15.7	-15.0	-1.1	-5.0	10.8	15.7	10.0	-6.5	0.5	10.8	-5.3	-5.0	0.0	-15.0	7.5	-5.0	-6.65

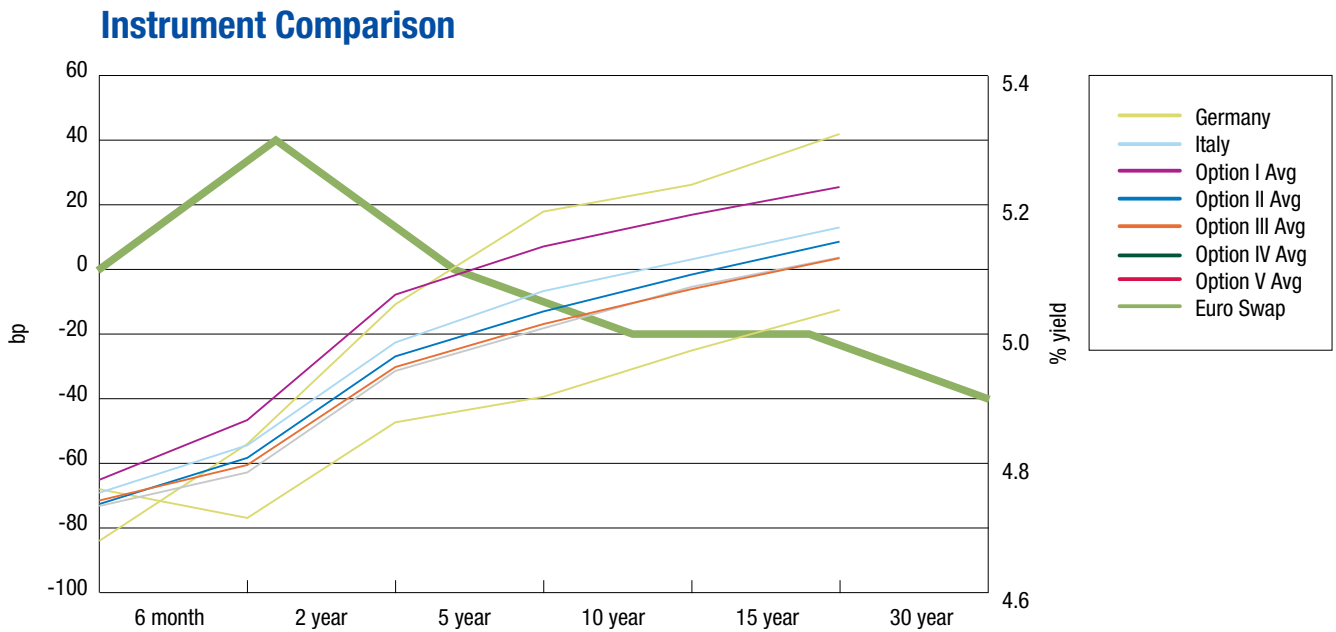
OPTION IV																			
-74.1	-75.0	3.8	-67.5	-80.0	-74.1	-75.0	-69.0	-72.7	-70.0	-77.0	-69.0	-74.0	-71.1	-75.0	-75.0	-80.0	-67.5	-76.0	-77.50
-59.3	-60.0	11.4	-35.0	-78.8	-59.7	-60.0	-45.5	-45.5	-55.0	-74.0	-63.0	-58.5	-61.1	-65.0	-60.0	-65.0	-35.0	-50.0	-78.83
-28.1	-29.2	11.2	-12.1	-48.0	-27.7	-29.2	-12.5	-12.1	-15.0	-48.0	-29.5	-29.2	-26.9	-25.0	-35.0	-35.0	-12.5	-20.0	-43.07
-13.1	-10.0	10.6	0.0	-35.5	-12.2	-10.0	-1.0	-3.1	-5.0	-35.5	-10.0	-8.4	-9.7	-15.0	-15.0	-20.0	-1.0	0.0	-28.07
-2.6	0.0	10.7	10.0	-21.5	-2.0	0.0	10.0	7.9	10.0	-21.5	0.0	0.5	1.1	-5.0	0.0	-15.0	7.5	10.0	-14.16
8.0	10.0	10.5	25.0	-7.6	7.8	10.0	20.0	17.3	25.0	-7.5	8.5	11.7	11.1	5.0	10.0	-5.0	15.0	20.0	-7.65

OPTION V																			
-76.2	-77.0	3.4	-70.0	-80.0	-76.4	-77.0	-70.5	-78.0	-70.0	-77.0	-72.0	-77.0	-78.1	-80.0	-75.0	-80.0	-70.5	-76.0	-77.50
-65.9	-65.0	6.2	-55.0	-78.3	-65.7	-65.0	-58.9	-58.9	-65.0	-72.0	-68.0	-63.0	-68.1	-70.0	-65.0	-65.0	-59.0	-55.0	-78.35
-35.8	-35.2	6.7	-25.0	-49.8	-35.5	-35.2	-28.4	-28.4	-25.0	-44.0	-36.5	-35.2	-37.1	-30.0	-40.0	-35.0	-35.0	-30.0	-49.75
-21.6	-22.0	7.1	-5.0	-32.5	-22.2	-22.0	-15.0	-23.3	-15.0	-32.5	-19.5	-17.1	-25.0	-20.0	-22.0	-20.0	-25.0	-5.0	-31.75
-10.2	-12.0	7.1	5.0	-21.5	-10.5	-12.0	0.0	-9.5	0.0	-21.5	-7.5	-4.6	-12.9	-10.0	-12.0	-15.0	-16.0	5.0	-15.45
-0.3	-2.8	6.8	15.0	-8.7	-0.9	-2.8	10.0	2.4	15.0	-7.5	1.0	3.8	-2.9	0.0	-5.0	-5.0	-4.0	10.0	-8.65

OPTION VI																			
-77.8	-78.9	5.1	-67.5	-85.0	-78.1	-78.9	-70.0	-78.0	-70.0	-75.7	-82.0	-79.8	-81.4	-85.0	-75.0	-80.0	-67.5	-76.0	-78.0

(Numbers 1-13 across the top row of this table represent, in no particular order, the 13 participating Primary Dealers and each matching column (their submitted prices))

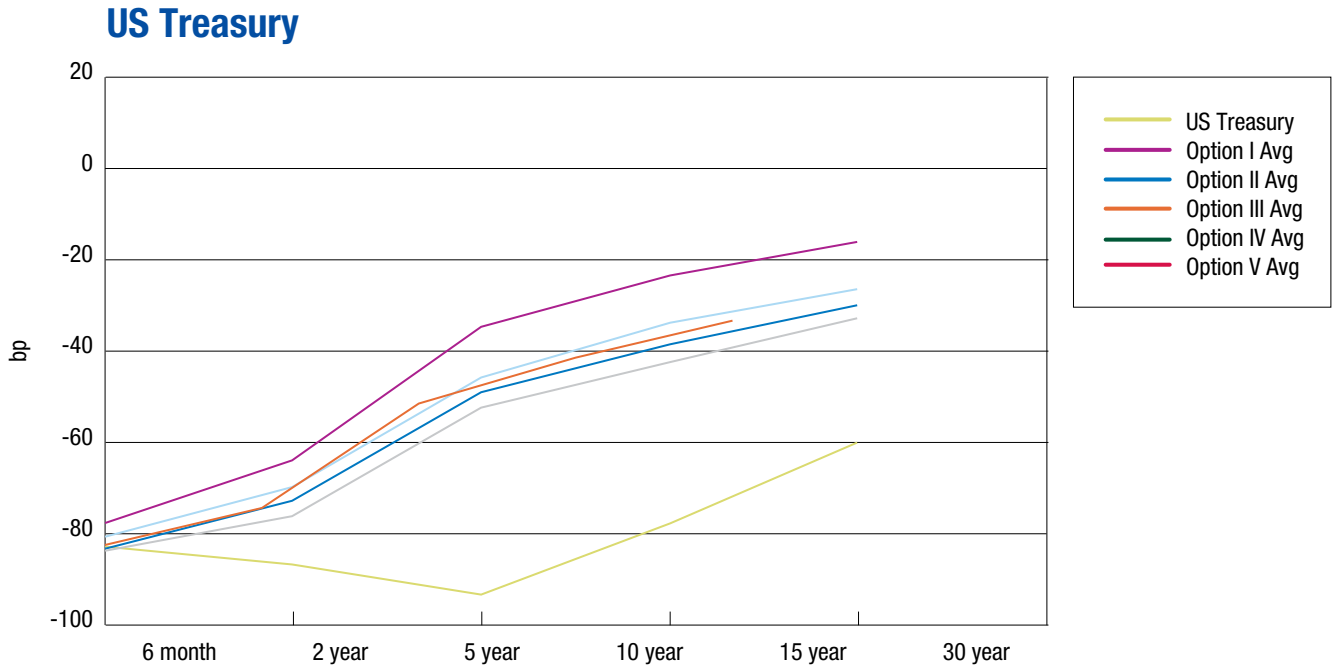
Instrument Comparison



- Options II, III and V compare well to Germany at short end of curve
- But dealer feedback suggests that some doubts over the Guarantee Fund and complexity of the structure appear to prevent these Options from “going through” the Bund.
- All Options outperform Italy in the medium to long end of the curve however this does not take into account the costs of any subordinated debt Italy would have to issue for the guarantee fund

Comparison with US Treasury

The following chart plots the spread of a Euro T-bill/bond versus the overnight interbank rate against the spread of a US T-bill/treasury versus its overnight interbank rate, the Federal Funds Rate.



- Options II and III compare well with the matched maturity swap spreads for the US Treasury 6M T-Bill.
- However all options are significantly worse from two years out.
- This might be explained by factors such as interest rate risk, currency risk, state of public finances, relative size of issuance to the overall market.

Conclusions

Taking account of both the pricing results and subsequent feedback from participating Primary Dealers and others, it was clear that the most favoured options were the simpler ones. These were the 6 Month Treasury Bill (Option VI) and the option of bonds issued jointly by a group of small/medium sized AAA issuers (Option V).

The 6 Month Treasury Bill is relatively of more modest ambition and its credit risk is very limited, due both to the limited duration of debt and the relative uniformity of issuers' short term credit ratings. This option would incentivise issuers to manage prudently their debt due to the possible impact on their sovereign coupon issuance.

On the other hand, were smaller to medium sized AAA-rated issuers to club together to pool their debt issuance then this could enable them to reduce the liquidity premia on their debt, at the same time demonstrating the feasibility of a common bond.

Option III, which combined 50% of the total annual issuance of each of the 15 euro area issuers, and incorporated a "guarantee fund", was priced slightly more competitively than the small/medium sized issuers option. Credit risk was expected to attach to the remaining 50% of debt issued separately by each sovereign issuer, which dealers expected would be priced accordingly. However it was clear from Dealer feedback that, for this reason, and also due to an aversion to the guarantee fund structure, Option III was not as popular as the simpler alternatives above.

The option that was priced the least competitively by some distance was Option I which combined the total annual issuance of all 15 euro area issuers. Despite expected liquidity benefits, it suffered from its lower credit quality. Option II, which was identical except for its incorporation of the guarantee fund, priced much more competitively. The spread between the first two options can therefore be interpreted as a credit spread, and this constitutes 7.5 b.p at the short end of the curve (6M Bill) and 24.4 b.p at the long end (30 yr bond). Although it can be said that the guarantee fund conferred a clear price advantage, there was clear skepticism of its viability among the participants.

The market survey showed benefits for most euro area Members, however the theoretical bonds (with the exception of the 6 month T-Bill) were deemed unlikely to trade through Germany. Many participating Primary Dealers noted the difficulty of pricing bonds aggressively in the current market conditions. The current market volatility, coupled with the number of assumptions that dealers were asked to take into account, appeared to contribute in large part to more conservative pricing.

Lessons from the Market Survey

The survey and subsequent feedback identified a number of themes that should be taken into account in any further detailed work on a common European government bond. Three themes in particular were:

- (i) A general aversion to structured products at the present time.
- (ii) A preference for isolating credit risk through subordinated debt, but at the same time a recognition that this debt would be priced accordingly in the market; and
- (iii) A preference for simple, palatable options easily understood and accepted by investors.

General aversion to structured products

The participating Primary Dealers recognised that investors would need to be comfortable with any common European debt instrument, such that it might take some time for its acceptance by the market. Options incorporating the "Guarantee Fund" were viewed by participating dealers as a structured product for which current investor appetite is poor. One dealer remarked that the recent crisis had shown that the offloading of risk by issuers into common structures could leave issuers with fewer incentives to manage risk effectively. This is an issue that would need to be addressed in further work.

“Bonds are unlikely to trade through Germany” in a transition phase as “it would take a number of years to develop a proper senior sub-structure”

- Dealer feedback

Senior/Subordinated Debt Preferred to “Guarantee Fund”

From a pricing point of view, many dealers commented that instead of a “guarantee fund”, they would have preferred a structure within which the volume of issuance placed by non AAA-rated issuers was: (i) capped on the basis of objective criteria, and (ii): senior to subordinated debt issued outside of the common structure. This preference was subject to the provisos that a mechanism could be developed to prevent issuers offloading risk into the common structure and also that the structure could be seen to be free from “political interference”.

However, as noted above in discussing Option III, subordinated debt would carry a credit premium and in some cases could carry lower credit ratings than presently the case for debt issued by the issuers in question. As such, it would be priced accordingly in the market. Dealers were not asked to price subordinated debt however such pricing would be necessary in order to more clearly demonstrate costs and benefits for individual participating Member States.

“Guarantee Fund needs more clarity and be seen to be free from political influence if investors are to rely in order for the market to price the bond more aggressively”

- Dealer feedback

Simplicity a virtue

Feedback from the market survey indicated a preference for simple and transparent products which would be easy for investors to understand. Option V and VI share the advantages of being simple and palatable options.

“The T-Bill has the advantage of being a simple and palatable option that could be sold to investors. Investors need to be comfortable especially with the size in today’s volatile market”

- Dealer feedback

Further Work

Feedback received from the 13 EPDA Members that priced the theoretical instruments leads us to conclude that pricing may have been somewhat conservative due to the number of assumptions required to be taken into account in pricing the instruments and also partly uncertainty caused by current market conditions.

The participating Primary Dealers seem to have used methodologies that at their core effectively added the prices of the constituent bonds to arrive at a weighted average. Using such a methodology, pricing may not have fully taken into consideration the impact of greater liquidity concentrated on one set of instruments or the “virtuous circle” created by a euro area-wide cash, futures and repo market built around one instrument. As one Dealer stated, with so many assumptions inherent in the exercise it was simply too difficult to factor all of them into a price so a simpler and more conservative methodology was used.

The fact that the guarantee fund was not quantified, nor the commitments of individual Member States, made it difficult for Primary Dealers to price the instruments aggressively, especially in the current climate. Almost all Dealers would prefer a complete structure to be confirmed before pricing it as a “benchmark” European government bond. In order to further consider a possible common debt instrument incorporating a guarantee fund or such similar liquidity cushion, it would therefore be desirable to quantify the size of the fund and Member State commitments. In turn, this greater certainty would be likely to provide dealers with greater confidence in pricing the bonds.

Despite its limitations, the market survey does demonstrate potential benefits and possible starting points for common issuance. The EPDA concludes that there is a strong case for examining more closely a common T-Bill for all euro area issuers or a common issuance of small to medium sized issuers.

A clear consideration for Primary Dealers in carrying out the market survey was the preference of their clients. For all the qualitative and quantitative benefits of a common issuance, its success will stand or fall on investor demand. The EPDA therefore strongly recommends that at any such time that a common issuance is considered at the official level, both the buy and sell sides should be closely involved in discussions at key stages in the process.

Appendix A

Table T.I: Total government debt securities outstanding

Total government debt securities outstanding and currency denomination at the end of 2006						
Country Name	Country Code	Total debt (in EUR millions)	Currency denomination (value in EUR)			
			Dom. Curr.	EUR	USD	Other
EURO AREA						
Belgium	BE	278,600		277,140	0	1,460
Germany	DE	916,564		912,596	3,968	0
Greece	GR	204,281		199,005	1,446	3,830
Spain	ES	312,457		308,332	3,037	1,088
France	FR	876,590		876,590	0	0
Ireland	IR	35,918		35,918		0
Italy*	IT	1,256,946		1,247,712	3,590	5,688
Luxembourg	LU	94		94	0	0
Netherlands	NL	210,043		210,043	0	0
Austria	AT	145,265		136,946	0	8,319
Portugal	PT	108,557		108,202	4	351
Slovenia*	SI	6,189	4,125	2,054	10	0
Finland	FN	58,904		58,860		44
NON-EURO AREA						
Bulgaria*	BG	3,562	1,096	1,404	1,062	0
Czech Republic	CZ	27,765	24,704	2,868	2	191
Denmark	DK	71,595	60,896	10,081	615	3
Estonia*	EE	100	0	100	0	0
Cyprus	CY	13,005	11,605	1,400	0	0
Latvia	LV	1,196	596	600	0	0
Lithuania	LT	4,001	801	3,200	0	0
Hungary*	HU	58,172	41,824	16,347	0	0
Malta	MT	2,990	2,990	0	0	0
Poland	PO	115,153	91,494	16,100	3,561	3,998
Romania	RO	3571	951	2620	0	0
Slovakia	SK	13,997	10,554	3,373	2	68
Sweden	SE	140,599	121,840	4,269	7,863	2,078
United Kingdom*	UK	680,800	678,525	0	2,275	0
Total	EU-27	5,546,913	1,052,001	4,435,854	27,435	27,117
Source: Responses from members of the EFC Sub-Committee on EU Government Bonds and Bills Markets (2007)						
Remarks:						
General	Data refer to central government debt securities only (i.e. not include regions, cities and dependent entities) and be valued in nominal terms, at end of year exchange rates					
Italy	* The euro denomination includes also foreign currency bonds swapped into euro.					
Slovenia	* As data refer to end-2006, domestic currency and euro denominated debt are still distinguished.					
Bulgaria	* Exchange rate used (end of period -29.12.2006): EUR/BGN 1.95583; USD/BGN 1.485060; EUR/USD 1.317003. Outstanding government securities issued in the domestic and external markets are included.					
Estonia	* Estonia's debt consist of 100 EUR millions in debt securities (60%) and 66,2 EUR millions (40%) of loans from supra-nationals					
Hungary	* Foreign currency after swaps: HUF/EUR exchange rate at end-2006: 252.3					
United Kingdom	* Inflation-linked bonds include accrued inflation uplift					

Source: Thomsen Group

Appendix B

**Table T.II.A: Gross and net issuance & Coupon types +
Bills and bonds denominated in national currency**

Original maturity		Total gross issuance	Bills and bonds denominated in national currency (in % total gross issuance)							Total net issuance
			Colours:	0.1 to 25.0%		25.1 to 75.0%		75.1 to 100.0%		
Countries	year	in €mn	up to 1Y	1 to 3Y	5Y	7Y	10Y	15Y	30Y	in €mn
EURO AREA										
Belgium	2000	146,042	77.1	0.2	4.3	1.7	12.7	1.8	2.2	5134.3
	2001	174,284	83.8	0.3	5.7	0.7	8.3	0.9	0.4	8033.2
	2002	210,830	86.5	0.1	3.8	0.4	6.4	2.8		7899.8
	2003	324,916	91.2	0.2	2.8	0.1	5.3	0.3	0.1	2600.6
	2004	277,212	88.7		1.0		4.9	2.6	2.9	7,115
	2005	351,776	92.9		2.6		3.4	0.2	0.9	4,265
	2006	331,708	93.2		0.5		3.7	1.7	0.9	2,030
Coupon types+	2000-4		O	F/FRN	F	F	F	F	F	
	2005-6									
Germany	2000	129,330	14.9	18.6	21.7		34.0		10.8	28,212
	2001	136,893	22.5	29.2	20.5		23.4		4.4	39,244
	2002	188,873	25.3	23.8	20.2		27.5		3.2	47,907
	2003	218,687	29.5	21.9	19.3		24.7		4.6	41,697
	2004	225,368	31.6	26.2	16.0		21.7		4.4	54,882
	2005	218,000	33.0	26.0	16.0		20.0		5.0	22,800
	2006	234,000	31.0	26.0	15.0		23.0		5.0	38,800
Coupon types+	2000-4		O	F	F		F		F	
	2005-6									
Greece	2000	24,531	9.8	18.6	20.1	3.1	27.7	1.4	19.3	
	2001	20,543	5.9		23.4	15.9	36.2	1.9	16.7	
	2002	29,256	5.1	22.4	25.2		29.0		18.3	
	2003	35,121	12.3	21.0	25.3	0.4	26.9	1.5	12.6	
	2004	37,285	9.6	22.1	31.3	3.6	22.3		11.1	
	2005	38,344	5.7	18.1	22.3		24.7	9.8	19.4	
	2006	31,210	6.4	16.6	22.0		25.5	9.9	19.6	
Coupon types+	2000-4		Z	F	F	F/FRN	F	F	F/IL	
	2005-6		Z	F	F		F	F/FRN	F/IL	
Spain	2000	83,563	22.6	38.6	13.5		17.9	3.3	3.0	11,214
	2001	65,227	19.1	36.4	13.6		20.9	3.4	6.6	2,322
	2002	66,863	27.6	25.6	14.2		21.4	9.2	2.0	7,561
	2003	71,589	27.5	37.2	10.0		17.4	3.8	4.0	-1,367
	2004	75,599	28.1	32.4	15.1		13.7	6.5	4.1	6,486
	2005	65,475	22.3	32.0	15.9		15.7	1.8	12.2	1,269
	2006	56,462	20.2	43.3	9.4		20.7		6.5	-4,997
Coupon types+	2000-4		Z	Z/F	F		F	F	F	
	2005-6		Z	Z/F	F		F	F	F	
France	2000	184,614	51.6	9.9	13.3	0.6	20.3		4.3	33,214
	2001	211,288	58.2	7.6	12.7	0.2	11.9	5.7	3.6	37,027
	2002	281,414	66.8	6.6	8.9	0.8	13.2	1.3	2.4	63,906
	2003	356,739	66.8	4.5	10.3	0.8	13.7	2.6	1.4	70,549
	2004	351,597	67.2	5.5	11.3	2.7	12.0	4.1	4.2	43,489
	2005	328,322	61.6	7.3	8.2	0.9	14.4	2.5	5.2	42,477
	2006	285,557	57.6	9.1	12.0	0.3	12.4	5.4	3.2	482
Coupon types+	2000-4		O	F/FRN	F/IL/FRN	F/IL	F/IL	F/IL	F/IL	
	2005-6		O	F	F/IL	F/IL	F/IL	F/IL	F/IL	
Ireland	2000	1,292			51.0		37.0	12.0		-759
	2001	0								-1,250
	2002	6,600			49.0		40.0	11.0		969
	2003	6,570			61.0		20.0	19.0		1,193
	2004	3,370						100.0		
	2005	1,440								
	2006	0								0
Coupon types+	2000-4				F		F	F		
	2005-6				F		F	F		

Original maturity		Total gross issuance	Bills and bonds denominated in national currency (in % total gross issuance)							Total net issuance
			Colours:	0.1 to 25.0%		25.1 to 75.0%		75.1 to 100.0%		
Countries	year	in €mn	up to 1Y	1 to 3Y	5Y	7Y	10Y	15Y	30Y	in €mn
Italy	2000	330,644	49.7	24.1	9.2	5.2	6.8	0.0	5.1	2,702
	2001	379,632	50.1	22.2	7.5	7.5	8.7	0.0	3.1	16,431
	2002	404,328	51.8	20.0	6.1	11.0	6.6	2.9	1.7	-7,256
	2003	431,911	50.1	18.4	8.5	8.8	6.8	4.0	3.5	6,054
	2004	417,758	53.1	14.4	6.4	8.3	10.5	3.7	3.7	24,492
	2005	397,563	53.3	14.3	10.4	6.5	8.8	3.8	2.8	21,780
	2006	388,409	54.2	15.1	8.6	5.7	9.6	3.9	3.0	34,577
Coupon types+	2000-4		Z	Z/F	F/IL	FRN	F/IL	F	F/IL	
	2005-6									
Luxembourg	2000	0								0
	2001	0								0
	2002	0								-57
	2003	0								-206
	2004	0								0
	2005	0								-144
	2006	0								-154
Coupon types+	2000-4	0	-	-	-	-	-	-	-	
	2005-6	0	-	-	-	-	-	-	-	
Netherlands	2000	52,135	65.0	15.0			20.0			2,655
	2001	54,367	64.0	11.0			25.0			5,818
	2002	73,820	69.0	17.0			14.0			8,996
	2003	110,370	69.0	12.0	6.0		13.0			15,631
	2004	106,016	69.0	11.0	8.0		12.0			17,119
	2005	90,200	64.4	11.3	6.4		11.2		6.7	5,562
	2006	81,139	71.4	9.3			12.4	4.7	2.2	-8,553
Coupon types+	2000-4		O	F	F		F			
	2005-6		O	F	F		F		F	
Austria	2000	15,367	1.4		3.8	26.9	60.3		7.6	2,909
	2001	12,337	3.7		22.8	13.1	55.4	0.1	4.9	1,943
	2002	15,195	7.6		4.2	25.3	58.6	0.1	4.2	2,877
	2003	18,981		1.0	6.9	9.0	46.5	35.6	1.0	5,303
	2004	19,687	7.6	0.8	1.0	3.8	62.9	15.5	8.4	5,417
	2005	24,109	2.0	2.0	1.0		37.7	32.8	24.5	6,026
	2006	22,493	4.9	7.9	2.1	12.4	31.4	36.9	5.0	4,416
Coupon types+	2000-4		-	F	F	F	F	F	F	
	2005-6		F	F	F	F	F	F	F	
Portugal	2000	7,996	4.0		31.6		64.4			2,715
	2001	9,760	11.4		34.7		53.9			4,159
	2002	14,142	8.1		41.1		35.6	15.2		7,375
	2003	17,668	57.1	28.7			14.1			5,299
	2004	18,513	63.8		22.7		13.5			6,582
	2005	33,265	49.7		14.4		17.6	18.3		11,773
	2006	25,788	46.1	3.9	14.7		15.5		19.8	4,350
Coupon types+	2000-4		Z	F	F		F			
	2005-6		Z	F	F		F	F		
Slovenia	2000	340	48.0	25.1	12.7		14.2			-109
	2001	447	50.5	7.7	14.0		13.9	13.9		207
	2002	1,185	32.0	15.2	38.0		10.0	8.0		684
	2003	970	34.0	21.1	17.0		31.6	10.0		342
	2004	1,003	33.0	17.0	17.0		33.0			234
	2005	2,143	28.9	17.0	31.6		22.5			1,068
	2006	1,824	38.4		31.8		29.7			666
Coupon types+	2000-4			F/FRN	F/FRN		F	F		
	2005-6			F	F		F			

Original maturity		Total gross issuance	Bills and bonds denominated in national currency (in % total gross issuance)						Total net issuance	
			Colours:		0.1 to 25.0%		25.1 to 75.0%			75.1 to 100.0%
Countries	year	in €mn	up to 1Y	1 to 3Y	5Y	7Y	10Y	15Y	30Y	in €mn
Finland	2000	16,100	54.0	18.0			2.0	26.0		-4,504
	2001	14,600	50.0	1.0	43.0		7.0			-1,271
	2002	15,434	53.0	1.0	3.0			42.0		-2,507
	2003	21,800	39.0	33.0	28.0					4,067
	2004	16,280	69.0	1.0				31.0		-468
	2005	9,200	45.0		55.0					-3,744
	2006	12,200	46.6		0.1		53.3			-450
Coupon types+	2000-4			F	F		F			
	2005-6			F	F		F			
Source: Responses from members of the EFC Sub-Committee on EU Government Bonds and Bills Markets (2007)										
+ F for fixed coupons, FRN for floating rate notes, IL for index-linked coupons, Z for zero-coupons and O for others - in order of importance for the respective maturity)										
Remarks:										
General	Data refer to central government debt securities only (i.e. not include regions, cities and dependent entities) and be valued in nominal terms, at end of year exchange rates									
NON-EURO AREA										
Bulgaria*	2000	417	46.6	48.6	4.9					43
	2001	412	39.8	26.7	29.8	3.7				63
	2002	467	24.4	20.9	19.1	26.2	9.3			194
	2003	328	28.4	12.4	27.3	16.4	15.6			-6
	2004	285	33.0	20.3	17.9	14.4	14.4			177
	2005	253	19.2	30.4	20.2		30.3			68
	2006	265	12.6	24.7	29.9		32.8			86
Coupon types+	2000-4			F/FRN	F	F	F			
	2005-6			F	F	F	F			
Czech Republic	2000	21,787	93.3	1.3	2.3	1.5	1.5			1,754
	2001	19,204	89.7	1.9	2.1	1.2	2.9	2.1		1,956
	2002	17,890	84.0	4.4	4.2		4.7	2.7		1,636
	2003	15,651	75.0	5.2	6.8		8.6	4.3		2,927
	2004	12,312	70.3	5.6	8.8		7.9	7.4		1,339
	2005	11,395	66.8	5.5	11.4		10.7	5.6		1,988
	2006	10,930	48.5	16.0	11.0		8.0	12.2	4.2	3,414
Coupon types+	2000-4			F	F	F	F	F		
	2005-6			F	F	F	F	F	F	
Denmark	2000	17,875	49.7	21.1	9.7		19.6			-3,026
	2001	20,109	48.2	17.3	3.9		30.6			-1,373
	2002	25,596	42.4	22.2	10.5	1.1	23.7			3,410
	2003	23,079	46.7	21.4	12.1		19.8			-1,875
	2004	23,988	48.1	20.5	10.4	0.8	20.2			-564
	2005	15,239	64.8	6.2	11.3		17.7			-8,054
	2006	12,262	64.9		4.2		30.9			-8,713
Coupon types+	2000-5			F	F		F			
	2006-7		Z		F		F			
Estonia	2000	0								-1.9
	2001	0								-1.9
	2002	0								-2.0
	2003	0								-1.9
	2004	0								-7.7
	2005	0								0
	2006	0								0
Coupon types+	2000-4									
	2005-6									

Original maturity		Total gross issuance	Bills and bonds denominated in national currency						Total net issuance	
			(in % total gross issuance)							
Countries	year	in €mn	Colours:	0.1 to 25.0%		25.1 to 75.0%		75.1 to 100.0%		in €mn
			up to 1Y	1 to 3Y	5Y	7Y	10Y	15Y	30Y	
Cyprus	2000	884	56.8	20.3	17.2		5.8			354
	2001	1,910	60.9	18.8	16.6		3.3	0.4		1,435
	2002	1,562	43.5	32.4	22.9		0.4	0.9		817
	2003	2,066	35.9	19.8	42.8		0.5	1.0		1,686
	2004	2,355	48.3	25.7	22.8		2.7	0.5		122
	2005	2,109	42.0	13.2	18.6		18.7	7.5		497
	2006	1,883	37.7	14.5	28.5		19.3			153
Coupon types+	2000-4			F	F		F	F		
	2005-6			F	F		F	F		
Latvia	2000	434	49.1	26.2	24.6					137
	2001	270	32.8	13.7	53.5					57
	2002	132	48.9		51.1					58
	2003	295	30.5	8.0	12.7		48.8			123
	2004	163	74.7				25.3			71
	2005	201	56.2		32.7		11.1			-4
	2006	237	31.4		25.4		43.2			-6
Coupon types+	2000-4			F	F		F			
	2005-6				F		F			
Lithuania	2000	849	73.7	21.7	1.5	3.1				111
	2001	466	64.6	18.9	10.0	6.5				123
	2002	587	32.5	39.5	17.9	4.0	6.1			262
	2003	571	33.4	36.6	13.8	3.5	12.7			105
	2004	304	43.8	20.5	21.3		14.5			-112
	2005	379	46.9	16.0	12.6	14.9	9.5			97
	2006	319	57.7	30.0		5.5	6.8			-244
Coupon types+	2000-4			F	F	F	F			
	2005-6			F	F	F	F			
Hungary*	2000	11,458	67.0	23.0	7.0		3.0			1,108
	2001	13,869	65.0	20.0	9.0		4.0	1.0		2,456
	2002	20,820	68.0	18.0	8.0		5.0	1.0		4,714
	2003	22,225	64.0	16.0	10.0		8.0	1.0		3,115
	2004	21,985	73.0	12.0	8.0		6.0	2.0		1,526
	2005	23,865	72.0	12.0	8.0		6.0	2.0		1,881
	2006	29,054	70.0	14.0	8.0		6.0	2.0		4,018
Coupon types+	2000-1		Z,F	F	F,FRN		F	F (2001)		
	2002-6		Z,F	F	F		F	F		
Malta	2000	1,207	83.3			1.9	7.0	7.8		284
	2001	1,470	75.7				10.7	13.6		175
	2002	1,832	91.6		3.2		2.7	2.5		103
	2003	2,051	83.2			4.0		9.0	3.8	250
	2004	1,754	80.8		2.5	1.7	2.3	3.3	9.4	270
	2005	1,460	73.8			15.1			11.1	163
	2006	1,016	89.5			4.4	6.1			-68
Coupon types+	2000-4			F	F	F	F	F	F	
	2005-6			F	F	F	F	F	F	
Poland	2000	22,123	54.3	18.6	23.1		4.4			4,628
	2001	28,611	48.2	28.2	20.4		3.9			11,490
	2002	30,200	39.6	28.7	24.4		6.0	1.2		11,444
	2003	27,862	43.4	33.5	15.5		7.8	0.1		7,800
	2004	33,371	35.1	33.3	22.0	1.0	8.5	1.0		10,383
	2005	31,367	22.2	27.9	29.7	6.6	11.1	2.5		6,111
	2006	34,542	22.0	24.0	18.0	8.0	22.0	5.0		10,059
Coupon types+	2000-4			Z/FRN	F	FRN	F/FRN	F		
	2005-6			Z/FRN	F/FRN/IL	FRN	F/IL	F		

Original maturity		Total gross issuance	Bills and bonds denominated in national currency (in % total gross issuance)							Total net issuance
			Colours:	0.1 to 25.0%		25.1 to 75.0%		75.1 to 100.0%		
Countries	year	in €mn	up to 1Y	1 to 3Y	5Y	7Y	10Y	15Y	30Y	in €mn
Romania	2000	4,277	96.4	3.6						3,790
	2001	3,238	99.9	0.1						2,658
	2002	2,022	92.2	7.8						1,698
	2003	1,330	81.4	17.7	0.9					1,236
	2004	1,621	93.7	5.1	1.2					1,445
	2005	920	5.4	41.6	34.6	2.4	9.5	3.5		919
	2006									
Coupon types+	2000-4		F	F	F/IL					
	2005-6		F	F	F/IL	F	F	F		
Slovakia	2000	1,998	21.0	48.8	19.3	2.8	8.1			172
	2001	4,871	18.9	28.2	21.4	15.6	15.9			3,695
	2002	3,616	59.6	26.8	7.9		5.7			1,490
	2003	3,718	35.7	29.8	9.8	9.8	14.9			1,287
	2004	3,605	27.8	28.6	21.1		11.1	11.4		583
	2005	1,929	8.0		55.9	10.1	12.6	13.5		232
	2006	960			29.1	25.6	5.2	18.9	21.2	-232
Coupon types+	2000-4			F/Z	F/FRN	F/FRN	F/FRN	F		
	2005-6				F/FRN	Z	F	F		
Sweden	2000	37,571	71.4	11.7	2.9	1.8	9.8	2.0	0.5	-7,192
	2001	39,155	56.3	22.8		3.9	12.7	3.7	0.6	-13,906
	2002	45,255	60.9	14.8			18.5	3.2	2.5	3,164
	2003	55,165	66.9	8.5		3.6	9.2	9.6	2.2	11,592
	2004	60,338	55.8	18.3	7.1	2.7	4.0	10.0	2.1	10,038
	2005	53,834	81.4	6.0	6.0		5.0	1.0	1.0	-1341
	2006	52,065	85.2	1.3	2.7		7.5	2.7	0.8	-4,674
Coupon types+	2000-4		Z	F	F	F	F	F/IL	IL	
	2005-6		Z	F	F	F	F	F/IL	IL	
United Kingdom*	2000	48,386	65.9					9.0	25.2	-22,789
	2001	85,654	74.3				10.4	1.7	13.7	2,717
	2002	179,971	76.8		7.4		5.7	1.6	8.4	22,546
	2003	204,233	65.0	4.0	9.2	0.7	11.2	2.3	7.6	47,120
	2004	220,504	66.7	3.8	7.9	0.6	4.6	4.0	12.5	53,753
	2005	217,711	67.7	0.0	4.0	4.6	3.0	7.3	13.4	54,143
	2006	208,843	56.6	0.0	5.3	1.9	11.7	11.8	12.8	42,639
Coupon types+	2000-4			F	F	F	F/IL	F/IL	F/IL	
	2005-6				F	F	F/IL	F/IL	F/IL	

Source: Responses from members of the EFC Sub-Committee on EU Government Bonds and Bills Markets (2007)

+ F for fixed coupons, FRN for floating rate notes, IL for index-linked coupons, Z for zero-coupons and O for others - in order of importance for the respective maturity)

Remarks:

General	Data refer to central government debt securities only (i.e. not include regions, cities and dependent entities) and be valued in nominal terms, at end of year exchange rates
Bulgaria	Exchange rate used: EUR/BGN 1.95583
Hungary	* Average HUF/EUR exchange rate in 2006 used for calculations: 264,26
United Kingdom	* The UKDMO issuance calendar is designed according to financial years and not calendar years. All exchange rates are based as of 30 September of the respective year (i.e. mid-way through the financial year)

Appendix C

Precedents for Common Debt Issuance

This paper briefly summarises five examples of common bond issuance at the national and sub-national level, both within and outside Europe. The following examples do not constitute an exhaustive list, but might be viewed as precedents for certain aspects of common bond issuance, including:

- Credit rating for an instrument which includes a number of participating issuers of different credit ratings;
- Joint or several liability as between participating issuers;
- Liquidity provisions for the common instrument.

The examples are:

- I Germany: joint bond issuance by Lander
- II Denmark: Traditional covered bonds
- III Japan: Joint Local Government Bonds
- IV Scandinavian Municipal Bonds
- V International Financing Facility for Immunisation

I Germany: Common Bond Issuance by Länder

Of the 16 German Länder that jointly issue bonds, anywhere between six and 10-11 participate in joint issues, though not through a common issuing body. Each Land is severally liable for its share only in the common bond.

Fitch rates all 16 German Lander AAA, however Moody's and S&P rate some Lander rated AA3 or AA-. These differences in rating would appear to reflect differences in judgment as to the likely response of the German Federal Government in the case of a default by one of the Lander. The bonds jointly issued by the Lander are rated by Fitch as AAA.

II Denmark - Real Kredit Obligationer

The Danish traditional covered bond market is notable for instruments issued by separate issuers but which are fully fungible. These bonds are backed by mortgage loans issued by 4-5 banks and subject to the same terms and conditions as the loans. The banks offer the bonds separately. A 30 year bond, for example, might have three different coupons - 4%,5%,6% - reflecting the different mortgage loans. The fungibility of the bonds is guaranteed by the constitution of the system. For example, a 30 year bond with a coupon of 4% issued by one bank is exchangeable for a 30yr bond with a coupon of 4% issued by another bank.

III Japan: Joint Local Government Bonds

In Japan, a group of local governments may issue their bonds jointly under a "Joint Local Government Bond" scheme based on the Local Public Finance Law. Joint Local Government Bonds were offered each month in 2007 by 28 local governments. In the 2007 financial year, local government bonds were issued totaling 1,214 billion yen (approximately 100 billion yen per month). These were fixed at 10 year maturity with no early redemption.

The bonds are issued jointly under the names of each participating local government and under joint obligation, in accordance with Article 5-7 of the Local Finance Act. Apart from the joint obligation, a fund is established at a trustee bank using a portion of issuers' redemption funds for the purpose of liquidity enhancement, i.e., to ensure that issuers can repay principal and interest in a timely manner even if unforeseen circumstances arise. Specifically, the 28

issuing local governments set aside in that fiscal year 10% of the largest monthly principal and interest payment.

IV Scandinavian Municipal Bonds

Local and Regional Governments in the Nordic countries pool borrowing through funding vehicles which issue bonds in the international capital markets. These are not-for-profit institutions with low lending margins (although the Norwegian vehicle Kommunalbanken is required to fulfill a formal dividend target). Total lending by these institutions was €34.6 billion at December 31, 2006.

Liquidity appears to be a crucial component in assessing the creditworthiness of these funding vehicles. All four institutions have extensive levels of pre-funding to guard against possible future problems of refinancing maturing debt or funding new lending.

All four funding vehicles have policies for minimum liquidity which state that either a certain percentage of maturing loans or a percentage of funding has to be covered by liquid assets and/or liquid facilities.

- Kommunalbanken Norway is subject to a minimum liquidity requirement of 100% of projected (12 month) net cash requirements.
- KommuneKredit (Denmark) must have prefunding for up to 25% of its lending portfolio;
- Kommuninvest I Sverige AB is required to have a liquidity reserve of SEK 5.5 billion;
- Municipality Finance PLC of Finland is required to hold 5% of its funding portfolio.

The five largest exposures for each institution range between 11.2% and 19.7% of their lending.

The municipal funding vehicles benefit from their exposure to Local and Regional Governments, contributing to their AAA credit ratings. Factors supporting these credit ratings appear to include low-risk lending, prudent asset liability management, healthy liquidity, a strong market position, and a support and guarantee mechanism from the LRG sector or central government.

The vehicles are supported by the LRG sector in their home countries. The Danish and Swedish vehicles benefit from the joint and several guarantee of participating LRGs while the Norwegian vehicle benefits from a “letter of support” from the Kingdom of Norway.

V International Financing Facility for Immunisation

The Facility was proposed in 2003 by the UK Government as a temporary financing mechanism for sovereign governments to frontload aid payments in order to meet the Millennium Development Goals. The IFFIm's financial base consists of legally binding grant payments from its sovereign sponsors, on the basis of which IFFIm issues bonds in the international capital markets. IFFIm's first issue was in 2006, a five-year benchmark bond for US\$ 1 billion.

IFFIm's sovereign donors are France, Italy, Norway, Spain, Sweden, United Kingdom, and South Africa. Brazil is expected to join soon. By signing the grant agreements, these countries have agreed to make annual grant payments, subject to an agreed schedule, over 20 years¹⁹. IFFIm additionally borrows operating funds in the international capital markets, up to a prudently limited proportion of the sovereign obligations making up its financial base (see further below).

IFFIm's income consists of annual aid payments from donors. At regular intervals donors pledge 15-year streams of annual payments to the IFF. These donor pledges are legally binding and failure by a donor to make any of these

¹⁹ The following donor commitments have been pledged so far: United Kingdom, £1,380 million over 20 years; France, €1,240 million over 20 years; Italy €473 million over 20 years; Spain €190 million over 20 years; Sweden SEK 276 million over 15 years; Norway US\$ 27 million over 5 years; South Africa US\$ 20 million over 20 years. Brazil has announced that it will commit US\$ 20 million over 20 years. IFFIm Update, 3 June 2008, p.2. See www.iff-immunisation.org.

payments in a 'stream' to which it is committed would be viewed by financial markets as a sovereign default. Donors are severally, not jointly, liable for making their payments to the IFF.

Although its constituent sovereign donors carry a range of credit ratings, IFFIm has been rated AAA by Fitch Ratings, Moody's and Standard & Poor's. The risk that funds are not available to make debt service payments as they come due is minimised by the facts that the total amount of outstanding bonds is limited to only a portion of the net present value of the grants and that the International Bank for Reconstruction and Development acts as treasury manager. The key credit risk is that of recipient countries – which comprise 70 of the world's poorest countries - entering into protracted arrears with the IMF, resulting in donor's exercising rights to withhold grant payments. To mitigate this risk, IFFIm will borrow funds only up to a prudent percentage of the net present value of the payments it is scheduled to receive from donors.