The sovereign debt crisis in Europe:
Lessons from the past, questions for the future

Roberto Perotti
IGIER – Bocconi University, CEPR and NBER

Recent developments and proposals in the sovereign debt crisis

Based on the discussion above, the fiscal consolidations implemented by several European countries could well aggravate the recession. In this second part I will review the recent measures adopted to cope with the sovereign debt crisis, and several proposals on the table for further measures.

Obviously, one measure could be to end or split the Eurozone. Many economists and commentators take it for granted that the Eurozone cannot survive. The reasons why the Eurozone might not be an Optimal Currency Area are well known. Still, it might be useful to note that, contrary to a widespread impression, the vast majority of Europeans are in favor of the Euro. In the latest Eurobarometer survey, in all countries except Cyprus a majority of individuals answered "for it" to the question: "Please state for [the following] proposal whether you are for it or against it: A European Monetary Union with one single currency, the Euro". The percentage of "for it" in Germany was 72 percent, one of the highest. Be as it may, in this paper I do not intend to take sides on this issue. I will focus on two specific aspects of the measures adopted and of the proposals on the table.

First, the key feature of the European sovereign debt crisis is the close, two-way interaction between sovereign risk and financial sector risk. Figure I (at the end of the paper) displays the sovereign and bank CDS premia in selected OECD countries, and their correlation. In most European countries they move closely together, with correlations of about .5 or above. The correlation in the US is close to 0. The interaction is less

close in the US because, for a variety of reasons, banks hold much less government debt than in Europe.[1] In 2012:Q2, Italian and German banks held more than 20 percent of their respective sovereign debt, equivalent to about twice their capital (see Gros 2013). The first issue I will focus on is to what extent the measures adopted and proposed address this vicious circle.

Second, it is often argued that the existing problems of the Eurozone stem in large part from the impossibility of a well-functioning monetary union without a fiscal union. Although this statement seems to have achieved the status of a "folk's theorem", theoretically it is not clear why this should be so. In addition, the concept of "fiscal union" is rarely spelled out in detail. It typically includes one or more of the following features: a common deposit insurance, a common unemployment insurance, or a full-fledged federal system with a Eurozone Economy minister and a large federal budget. In many cases, it seems that two major reasons for a "fiscal union" are the need for a system of mutual insurance and the need compensate those countries that experience a loss of competitiveness in the currency union.

Hence one virtually unavoidable feature of all these proposals: in the foreseeable future they would be asymmetric: they would almost certainly involve large transfers of resources from fiscally healthy countries to periphery countries. A mutual insurance system under which a set of countries loses in all plausible states of nature is a political non-starter. It is indeed surprising how a large number of economists and commentators keep devising ever more sophisticated proposals that would imply an "ex ante" transfer of resources. This approach is not only not very constructive: it can backfire, by putting unnecessary pressure and blame on the "donor" countries and possibly inducing them to withdraw from the Eurozone.

In what follows, I will therefore review the main features of the measures adopted so far to cope with the sovereign debt crisis, and of the main proposal on the table, with a particular focus on the flow of resources they imply.

[1] Among the reasons, aside from moral suasion by the government in at least some countries, is the permanent partial exemption accorded to banks in the EU by article 145 of the Capital Requirements Directive implementing the Basel agreements. It allows European banks that choose internal risk models to apply instead the Standardized Approach (implying zero risk weight) for government bonds (see Gros 2013).

The Long Term Refinancing Operations

Two 36-months LTROs were implemented in December 2011 and February 2012, for a total amount of about €1 trillion. The main motivation was to furnish liquidity to banks. Many commentators have argued that the operation failed, because all the new liquidity came back to the ECB in the form of higher bank deposits. This is obviously incorrect, because from a purely accounting viewpoint this had to happen. Nevertheless, for the purposes of this discussion the operation did have a large, unintended consequence.

Table 9: Total LTROs and shares of Spanish and Italian banks

	Spain	Italy	LTRO
Sep-11	12.2	15.4	379
Oct-11	10.9	16.1	396
Nov-11	13.2	17.4	392
Dec-11	12.1	22.8	704
Jan-12	22.9	22.2	677
Feb-12	23.4	21.5	652
Mar-12	28.9	24.5	1091
Apr-12	28.8	24.6	1092
May-12	29.7	25.3	1062
Jun-12	29.6	25.0	1080
Jul-12	30.9	25.1	1075
Aug-12	31.3	25.3	1078
Sep-12	31.1	25.7	1059
Oct-12	30.2	25.8	1058

Source: Bruegel database of Eurosystem lending operations developed in Pisani-Ferry and Wolff (2012)

The banks receiving the liquidity were largely southern European banks: during 2012 Spanish and Italian banks accounted for more than 55 percent of all outstanding LTRO lending, up from about 30 percent in November 2011 (see Table 9); in contrast, the countries depositing the funds at the ECB appear to have been mostly Northern European banks. In fact, in the first months of 2012 a clear pattern can be detected: the Spanish and Italian sovereign debt held by Spanish and Italian financial institutions increased considerably (see

Table 10) , with a corresponding decline in the shares of this debt held by foreigners. Thus, Southern European banks appear to have used the LTRO funds to make a simple carry trade with their own sovereign bonds.

Table 10: Holdings of own sovereign debt by Spanish and Italian OMFIs and other financial institutions

	Spain			Italy		
	OMFI	Other financial	Total	OMFI	Other financial	Total
2011_1	26.1%	15.1%	41.2%	14.9%	18.9%	33.8%
2011_2	26.9%	15.7%	42.6%	15.5%	18.4%	33.9%
2011_3	24.8%	16.4%	41.2%	16.9%	18.6%	35.4%
2011_4	28.1%	16.9%	45.1%	16.5%	18.1%	34.6%
2012_1	34.9%	16.2%	51.1%	20.0%	18.6%	38.6%
2012_2	34.3%	17.6%	51.9%	21.4%	19.1%	40.4%
2012_3	32.9%	17.2%	50.2%	21.4%	20.5%	41.9%
2012_4	32.6%	15.9%	48.5%	21.5%	21.0%	42.5%

OMFI: Monetary Financial Institutions excluding Central Bank
Source: Bruegel database of sovereign bond holdings developed in Merler and Pisani-Ferry (2012)

Thus, the unintended consequence of LTRO was to make sovereign debt holdings even more fragmented along national lines, making the loop between sovereign and banking sector risk even tighter.

The Treaty on Stability, Coordination and Governance (the "six pack")

TSCG, more commonly known as "six pack", took effect in January 2013. The six pack is a revised version of the Stability and Growth Pact, intended to enhance its effectiveness. It has several complicated features, but for our purposes it is sufficient to highlight just two: first, high debt countries should not have a cyclically adjusted deficit of more than .5 percent of GDP; second, all countries should enshrine in their national law corrective mechanisms to reach their medium Term Budgetary Objectives.

The six pack is largely a political document, designed to alloy the fears of voters in the core countries. It is widely regarded as having no real enforcement mechanism, aside from a maximum fine of .1 percent of GDP that can be decided by the European Court of Justice after a complicated process. Less well known is the fact

that it has an escape clause that can *de facto* be invoked to nullify its effects: the six pack allows deviations from targets in the case of unusually low growth, or a European recession. In fact, on April 27 Spain just obtained a two-year extension on its plan to reach a deficit of 3 percent, citing precisely the unusually low growth.

Still, the six pack is not entirely without teeth. It has an enforcement mechanism, albeit an indirect one: if a country that is not in compliance with the six pack cannot have access to emergency funding from the European funds and from the new bond-buying program of the ECB. I now turn to these important developments.

The European funds

The European Financial Stability Facility (EFSF, established in June 2010) lends to countries under specific conditions, by funding itself on the capital market.[2] Its debt is backed by guarantees by the Euro Zone countries, proportional to their shares in the ECB capital. The total guarantees amount to €780bn, which implies a maximum lending capacity of €440bn (due to an over guarantee of up to 165 percent).[3] These are *several* guarantees: the maximum amount each guaranteeing country can lose is the face value of its own guarantee. Currently, the EFSF has committed about €290bn of loans (including up to €100bn for the recapitalization of Spanish banks).

In October 2012, the new European Stability Mechanism (ESM) became operative; it will overlap with the EFSF until the latter is phased out completely in 2014. It has a similar lending capacity to the EFSF, €500bn, but a different capital structure: €80bn of paid in capital (in five tranches, to be paid up to mid-2014), and €620bn of callable capital. This difference has often been interpreted as "contrary to the EFSF, the ESM can leverage up its position". This is not really correct. Both the callable capital of the ESM and the guarantees of

[2] The EFSF has a small capital of €30bn.

[3] This overguarantee is designed to ensure that the entire maximum lending capacity is fully backed by the guarantees of the AAA countries alone, so as to ensure a AAA rating for the EFSF itself. With the recent downgrading of France, the maximum lending capacity has decreased to €293bn.

the EFSF are contingent liabilities of the Eurozone countries; a country can end up losing either the whole guarantee or the whole callable capital, which are based on the same ECB shares. The key difference is more subtle, and as far as I know it has gone completely unnoticed. Because of the higher paid-in capital, and other legal features, including its governance structure, EUROSTAT has decided that the ESM can be considered as an independent *international financial institution*; in contrast, the EFSF was considered merely "an accounting and treasury tool [….] acting exclusively on behalf of" the Eurozone countries (see Eurostat 2011). Hence, while the debt of the EFSF was allocated pro quota to the gross national debt of each guaranteeing country, the funds raised by the ESM on the capital market will be considered its own debt, and will not add to the gross debt of the Eurozone countries. From this point of view, the ESM is politically much more viable for all countries involved. I believe this is the main reason why the European countries agreed to the change.

To be fair, there are two other differences between the two funds. The EFSF is a *pari passu* creditor, while the ESM will have seniority status (after the IMF).[4] This change was necessary to make the ESM acceptable to Germany and the other AAA countries. Seniority is a double-edged sword from the point of view of moral hazard and the goal of breaking the vicious circle between sovereign debt and financial sector risks. On one hand, any senior official intervention reduces the private recovery rate on government debt in case of default. As Gros (2012) shows, the relation between official senior lending and private recovery rate is non-linear; an initial lending by €100bn reduces the private recovery rate by little, but as official lending as a share of government debt increases, an additional €100bn of senior lending can reduce the private recovery rate by a large amount. Hence, an ESM intervention can it concentrate considerable default risk in the portion of sovereign debt held by the financial sector. On the other hand, it makes the financial sector more cautious about buying sovereign debt in the future.

The third difference between EFSF and ESM is that the latter will be able to lend directly to the financial sector, although only once a Eurozone bank supervision system is in place under the ECB. This is in

[4] It is not clear, however, that the markets really believed that the EFSF would not have been granted *de facto* seniority.

response to issues raised on the occasion of the EFSF program for the Spanish financial system, that the Spanish government was reluctant to accept because it was channeled via an agency of its own, thus increasing the official government debt correspondingly. However, the EFSF loan was *pari passu* (at least in theory); an ESM intervention might be channeled directly to the financial system, but will also be senior; thus, it will not affect directly the private recovery rate of holders of government debt, but will affect the recovery on banks' bonds.

Fiscal aspects of the Outright Monetary Transactions program

Whatever its advantages and disadvantages, it is well understood that the ESM will not have enough resources to address a serious debt crisis affecting Spain and Italy. In the textbook "bad expectational equilibrium" case, a country suffering from temporary illiquidity might be forced to default because each would-be lender fears that the others will no longer lend to the country; as a consequence, this expectation becomes self-fulfilling and the country cannot roll over its debt any longer (see e.g. Calvo 1988).

The textbook solution to such a problem is an announcement that the Central Bank stands ready to purchase an unlimited amount of government debt. In theory, such an announcement by itself should eliminate the bad expectational equilibrium, without any actual need of intervention by the Central Bank. On September 6, 2012, the ECB announced the "Outright Monetary Transactions" program: it stands ready to purchase and sterilize unspecified but potentially unlimited amounts of government debt on the secondary market, with maturity up to three years, provided a country were subject to the conditionality of an EFSF/ESM program.

As made clear by the ECB in response to several questions, OMT holdings by the ECB will not have seniority status. However, there is a subtle issue here. The ECB stated that "it accepts the same (pari passu) treatment as private or other creditors… in accordance with the terms of such bonds". Contrary to what most commentators think, even the holdings of Greek bonds by the ECB, acquired under the (much smaller) OMT

predecessor, the Security Market Program, did not have inherently senior status: "The SMP seniority only activated when Greece switched the ECB's holdings into special securities protected from restructuring [….] That means the ECB could, if hell-bent on avoiding losses through a restructuring, stay legally 'pari passu' but effectively senior anyway " (Cotterill 2012). As further noted by David Nowakowski of RGE Monitor: "The ECB can promise to be *pari passu*, until a default threatens and it can then pressure Euritania to let it swap into local or international bonds without CACs that receive special treatment, exactly as it did with Greece. They could still argue, though not in good faith, that those bonds are not senior to anyone, they just got lucky again to get such a great offer. The ECB has tremendous leverage on countries whose banking systems depend on it for funding, so it can call the shots."

In any case, it is widely believed by market participants that the OMT announcement has had a considerable impact on the spreads of peripheral countries' debt. But there are two good reasons why markets might overstate the importance of the OMT program. On the "demand" side, activation of the program requires activation of an ESM program; this was designed to obviate the moral hazard problems of government debt purchases by the ECB.[5] But governments are extremely reluctant to enter an ESM program, which would be perceived as a signal of political failure.

On the "supply" side, it is well known that the German Bundesbank opposed the creation of the program. Because it is hard to imagine the Eurozone implementing a large program against the opposition of the Bundesbank, it is of fundamental importance to try and understand the German position. This position has been widely criticized in Europe because it makes little sense in light of the textbook model. To make sense of it, one must ask what could happen off-equilibrium – always a possibility in the real world. Also, one has to bear in mind that this program was mostly designed to preempt problems with Spain and Italy, whose combined stock of government debt approximates €3,000bn. What could happen if the ECB did have to

[5] These moral hazard problems were in stark evidence in the summer of 2011 when, just a few days after the ECB announced the purchase of substantial amounts of peripheral debt under the SMP, the Italian government reneged on many budget measures it had previously agreed with the ECB itself.

intervene, buying hundreds of billions worth of this debt? One could envisage at least three problems from a German point of view.

First, in the real world nobody knows for sure if a country is just illiquid or insolvent. A default by one or more countries could result in large losses by the ECB. Even disregarding legal technicalities – which seem to require that national government immediately recapitalize the ECB if it has negative equity - how large a loss could the ECB sustain? Buiter (2012) estimate about €4,000bn, equal to the present discounted value of all future seigniorage; Reis (2012) estimates €200bn, obtained with the same method but taking into account a trend increase in velocity, the incentives of the Central Bank to inflate and the ensuing increase in velocity, and the currently low interest rates, that imply a very low inflation tax.

Beyond mere economics, the key relevant question is: what is the maximum ECB loss that is *politically* sustainable in Germany? For historical and cultural reasons, the answer would have to be: very small. In this sense, a large OMT intervention would indeed be risky from the point of view of Germany.

Second, is the commitment to total sterilization credible, and would the sterilization be effective anyway? It is frequently asserted that OMT purchases would be different from QE, because the latter is not sterilized. Yet the difference appears to be based largely on semantics. The ECB has not stated how it would sterilize the purchases; a common interpretation is that it would sell equal quantities of government debt of healthy countries. But it is easy to see that this might not work; the Eurosystem currently holds about €590bn of government securities; although the ECB does not release the country breakdown, it is likely that most of this amount consists of debt of problem countries. A large OMT operation on Spanish and Italian debt could not be sterilized this way. More likely, the ECB would "sterilize" by offering banks to convert their free reserves into 1-week deposits with a minimal remuneration, as it did with the Securities Markets Program launched in

May 2010. However, these deposits are part of the monetary base, and banks would probably regard these very short term deposits and free reserves as almost perfect substitutes. [6]

Third, what happens if, after some time, a country is no longer deemed in compliance with the ESM program conditions? Realistically, can the stock of debt accumulated by the ECB be liquidated? Also, since monitoring compliance is entrusted mainly to the Commission, the fear that the process might be influenced by political considerations (as it has frequently happened in the past regarding compliance with the Maastricht Treaty and the SGP) is not unfounded. In fact, as we have seen Spain has just been granted an extra two years to reach its fiscal targets.

"Fiscal union" and Eurobonds

To many in Europe, all these developments should just be preconditions to a "fiscal union". As discussed above, the meaning of this expression is rarely spelled out in details, but one component that has been very frequently advanced in many quarters is a "Eurobond".

This expression too incorporates a variety of proposals; once again, only in a few cases the details are spelled out by their proponents. All cite a liquidity premium as a positive effect, which has variously be quantified from a few basis points to as much as 30 bps. I will not discuss the possible liquidity premium in this survey, but I will focus on other properties of the main proposals (see Claessens, Mody and Vallée 2012 for a more complete survey).

The simplest, and for a long time the most common, type of Eurobond proposal is a bond issued at the central level, which enjoys a *joint and several* guarantee by each member country.[7] In some cases it appears that each country is supposed to pay for the interest and principal of the share of an issue that it has received;

[6] Because of the large MROs and LTROs there is excess liquidity in the system, and this is largely a nominal issue. But in more normal times sterilization would require increasing the interest rate in absorbing operations or issuing longer term debt certificates.

[7] In a joint and several guarantee, each guarantor can be called upon to pay for the *whole* guaranteed amount. That guarantor can then ask the other guarantors to contribute their shares.

this would imply no ex ante transfer between countries. But in most cases, it appears that the Eurobonds are *intended* to be explicitly a mechanism for ex-ante redistribution, even though exactly how the proceeds of a Eurobond issue are distributed to and repaid by the individual countries are often not specified. In either case, the potential for ex-post transfers is significant, via the joint and several liability. But obviously it is unlikely that a country will be willing to pay the whole amount if other countries refuse to pay their shares, making the whole construction problematic, if not outright unfeasible.

Indeed, Tirole (2012) shows that a joint and several guarantee cannot be optimal in an asymmetric environment, in which the guarantor is unlikely to enter distress if the insuree is not in distress. Intuitively, joint and several liability allows the insuree to borrow more; but to do that, the insuree must be able to compensate the guarantor. This can happen only if shocks are symmetric, i.e. if the guarantor is equally likely to enter distress in the future and to be guaranteed by the current insuree.

A proposal that addresses this problem, but only partially, is the so called "Blue and Red Bond" proposal by Delpla and Weizsäcker (2011). In steady state, an amount of debt up to 60% of the GDP of each country, called the "Blue bonds", would be covered by a *joint and several* guarantee. Any part in excess of this, the "Red bonds", can be honored by each country only after the Blue bonds have been honored. And because the Red debt cannot be guaranteed, bought or rolled over using funds from the ESM, this arrangement preserves the market signal at the margin. An independent council would decide each year how much Blue debt a country can issue, based on its performance in terms of some fiscal policy indicators. However, the joint and several liability can potentially create large transfers between countries, and generate large moral hazard problems. In addition, in a crisis there would be an enormous political pressure to increase the amount of Blue debt that a country can issue.

The only Eurobond proposal that avoids the joint and several guarantee is the "European Safe Bonds" of Brunnermeier at al. (2011). Its specific purpose is to address the vicious circle of sovereign debt and financial sector risks, by providing a large, very safe asset that banks can hold without exposing themselves to

concentrated sovereign risk. The idea is to construct a security by pooling EZ countries' government debt in fixed proportions (presumably in proportion to their GDPs) and tranching it in two parts. The junior tranche absorbs the first X percent of the losses due to a default in any of the underlying government securities. The senior trance, the ESB, is affected only if the default amounts to more than X percent. By setting X high enough, the ESB can be made very safe, helping to break at least one part of the link between sovereign debt risk and financial fragility. To preserve market signals, obviously not all of the debt of each country should be pooled.

One obvious advantage (or disadvantage, depending on the point of view) of the ESB is that it does not involve any transfer between countries.[8] This should make it politically acceptable to the more fiscally healthy countries. It is also less prone to political manipulation, being based on a simple formula. The problem in implementing this proposal appears to be of a different nature: "tranching" and "securitization" are not popular words in the European political and media circles these days. Politicians are reluctant to put forward a proposal that relies on a widely discredited (if little understood) mechanism.[9]

Conclusions.

At the time of writing, Eurozone countries seem to have contained the sovereign debt crisis. But they have done so at the price of strong opposition by German monetary authorities, particularly as concerns the large government debt purchasing program. I have argued that the main German concerns are not entirely unfounded, even though they are little debated in policy or academic circles, and that the Eurozone is not likely to be able to pursue for long a monetary policy that is opposed by Germany.

I have also argued that many proposals for further fiscal "integration" are ill-defined, and in many cases carry the risk of large permanent transfers that are not politically sustainable.

References

[8] It would involve the possibility of transfers if the safety of the senior tranche were enhanced by a capital cushion paid in by each country, or by a joint and several guarantee.

[9] This problem is not purely theoretical: it has indeed arisen in at least one country at the level of discussion with Finance ministry officials (personal communication to the author).

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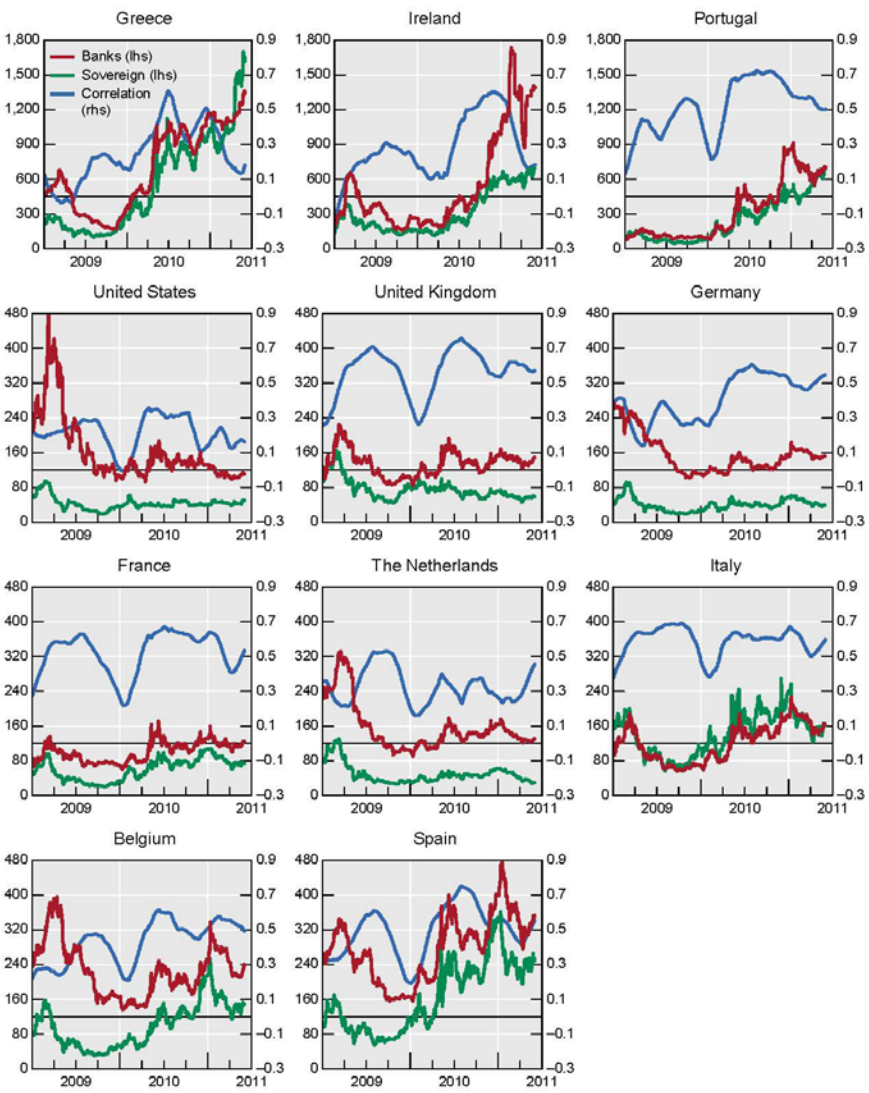
Figure I: Sovereign and bank CDS premia.

Graph A4.5

Sovereign and bank CDS premia in selected advanced countries[1]

In basis points



[1] Premia on five-year CDS on senior bonds issued by sovereigns or banks. The correlation index is equal to the three-month moving average of the correlation between changes in the two time series of CDS spreads, calculated on the basis of a GARCH (1,1) statistical model, using daily data.

Source: Datastream.

Source: CGFS (2011)