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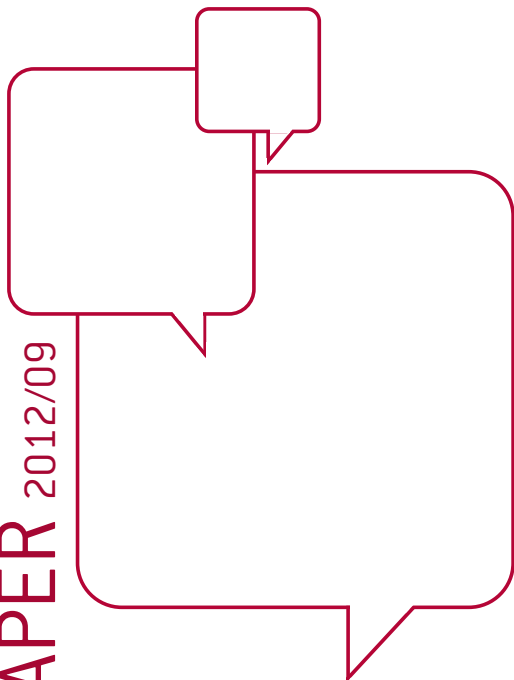
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# THE CREATION OF EURO AREA FINANCIAL SAFETY NETS

MICHIEL BIJLSMA<sup>1</sup>, SHAHIN VALLEE<sup>2</sup>

## Highlights

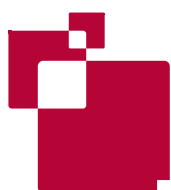
- The financial crisis has exposed the need to devise stronger and broader international and regional safety nets in order to deal with economic and financial shocks and allow for countries to adjust. The euro area has developed several such mechanisms over the last couple of years through a process of trial and error and gradual enhancement and expansion. Their overall architecture remains imperfect and leaves areas of vulnerabilities. This paper provides an overview of the recent financial stability mechanisms and their various shortcomings and tries to brush the outline of a more comprehensive safety net architecture that would coherently address the banking, sovereign and external imbalances crises against both transitory and more permanent shocks. It aims to provide a roadmap for further improvements of the current mechanism and the creation of new devices including a banking resolution mechanism and a more powerful mechanism to provide financial assistance addressing both the sovereign and external dimensions of the shocks thereby reducing the need for the ECB to fill the current void.

Keywords: financial safety-net; european crisis; ESFS; ESM; fiscal risk sharing.

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## Introduction

The European crisis has exposed the lack of European institutional mechanisms to deal with macroeconomic shocks. This has called for robust financial safety nets to deal with these shocks combined with credible ways to commit to prudent macroeconomic policy to reduce the probability of occurrence of these very shocks. So far, the creation of these safety nets has been a matter of trial and error. In particular the creation the European Financial Stability Mechanism (EFSM) and the European Financial Stability Facility (EFSF) in May 2010 responded to the urgency of the Greek crisis and the many subsequent improvements that led to the signature of the European Stability Mechanism Treaty (ESM) were responses to the evolution and the propagation of the crisis. Meanwhile, the European Central Bank's non-standard policy measures: broadening of the collateral framework, Emergency Liquidity Assistance, Long Term Refinancing Operations (LTRO) for 3 months, then 1 year and finally 3 years were all intended to address the symptoms of the a deepening banking sector crisis. These were all rather ad hoc responses to the evolution and the worsening of the situation rather than the result of a more analytical and systematic work on the typology of financial crises and the need to devise appropriate and comprehensive crises management tools.

There was, at the onset of the crisis, a widespread assumption that balance of payments crises couldn't happen inside a monetary union<sup>1</sup>. At the country level, the Stability and Growth Pact (SGP) and the multilateral surveillance by the European Commission gave the impression that fiscal crises would be prevented. On the banking side, the widespread perception by supervisory authorities was that regulation and self-regulation and well-diversified banking groups would largely prevent the occurrence of banking crises. As a result, Europe had no safety net to deal with the occurrence of these sorts of crises. In addition, article 125 of the Treaty (the so called no bail-out clause designed to prevent moral hazard) delayed the creation of a more systematic framework when it became evident that balance of payments, fiscal and banking crises could happen and could feed off each other. Setting up a permanent crisis management instrument eventually required changes in EU primary legislation. In fact, the creation of the European Stability Mechanism (ESM), the permanent European financial safety net that ought to replace the temporary ones created and amended through the crisis was only made possible through an amendment of article 136 in the Treaty, which allowed the creation of a rescue institution within the monetary union and which was only signed in the beginning of 2012. The ongoing ratification process of the ESM is an opportunity to assess the passed and future journey towards more robust financial safety nets in Europe.

We start this paper by providing a tentative framework for thinking about financial crises in the euro area and then describe the current financial safety nets in place. We proceed with reviewing the EFSF since its creation and the different amendments and enhancements that were proposed. We continue onto discussing the

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<sup>1</sup> For more on this see Pisani-Ferry and Merler (2012)

extent to which the ESM addresses the original shortcomings of the EFSF. Finally, we conclude by highlighting the current holes in the European financial safety net architecture and propose some remedies.

Our argument is essentially threefold, (i) the current mechanism is not designed to provide assistance to large countries undergoing a fiscal crisis and therefore alternative tools need to be developed, (ii) with respect to banking crises the current rescue mechanism is incomplete and leaves important gaps in the safety nets architecture, and (iii) these gaps force the ECB to engage in quasi-fiscal operations and yet refrain from explicit engagement, which undermines the effectiveness and blurs the distributional consequences of its policies while raising questions about the democratic legitimacy of its actions.

This calls for further and more solid work on financial assistance mechanisms to which this paper hopes to make a contribution.

## **1. Types of shocks and need for financial safety nets**

It is useful to start with a theoretical discussion about the typology of financial shocks and the best way to guard against them. A necessary prerequisite is to accept, as history has shown<sup>2</sup>, that regulation, surveillance and sound macroeconomic policy do not suffice to prevent crises. The economic literature on financial crises highlights three categories of crises: (i) banking crises that are often tied to prolonged periods of excessive credit growth and/or asset bubbles (ii) Fiscal or sovereign-debt crises originating with fiscal imbalances, and (iii) balance-of-payment crises linked to current account imbalances or sudden stops but that are usually associated with banking or sovereign debt crises.

All these shocks can be due to –in principle transitory– liquidity problems or more permanent solvency problems. The difference is essential because it determines policy prescriptions to a large degree but is extremely hard to determine in practice. Indeed, the current crisis has made it clear that countries can experience liquidity problems as a result of self-fulfilling runs (on their banks, on their sovereign debt, or on their capital account). Sovereigns or banks that are fundamentally healthy can be drawn into a bad equilibrium where markets demand high interest rates that ultimately induce bankruptcy. By coordinating beliefs, financial assistance can address such coordination problems and enforce a good, run-free, low interest equilibrium. To achieve this, policymakers can, in principle, mandate a lender-of-last-resort to provide unlimited assistance to countries or bank facing liquidity problems.

In practice, liquidity problems do not arise out of the blue, but are often triggered by weakening fundamentals. In addition, they can easily morph into fundamental solvency crises when mismanaged. This is important for two reasons. First, in the absence of ex ante agreement on crisis management mechanism,

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<sup>2</sup> See Carmen M. Reinhart & Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly*, Princeton University Press, 2009

the blurred line between solvency and liquidity can lead to political haggling over financial assistance, resulting in drawn-out negotiations and too-little-to-late policies. This can transform a liquidity shock into a solvency one. Second, even in the absence of such problems, after liquidity support has been provided, additional shocks can tilt the balance further towards unsustainability and then even genuine liquidity support can then result in losses.

While liquidity problems call for widespread guarantees and/or financial assistance, solvency problems on the other hand can only be addressed by default, restructuring or transfers. In the case of banks, bailouts usually involve using large amount of taxpayer's resources for deposit guarantees and recapitalization. Sovereigns have in principle a wider range of possibilities to restructure their debt –they can for example resort to inflation or devalue their currency– but these options are not available to EMU countries individually.

The table below illustrates the different mechanisms that European authorities have arranged over the past couple of years to deal with the different shocks identified above. Concerning the banking sector, central banks have been quite successful in addressing liquidity problems, as the event during the financial crisis of 2007-2008 have shown. However, it remains very difficult to address solvency problems especially when such problems have cross-border consequences.

**Table 1: Categories of crises and Current solutions**

Crises	Liquidity	Solvency
Banking	ECB emergency liquidity assistance, LTRO, non-conventional OMO, National governments' guarantees,	Recapitalization by national government / Failure
Fiscal	EFSF/ ESM/ IMF program	ESM/ Private Sector Restructuring / Default
Balance of Payments	Emergency Liquidity Assistance / Target 2	?

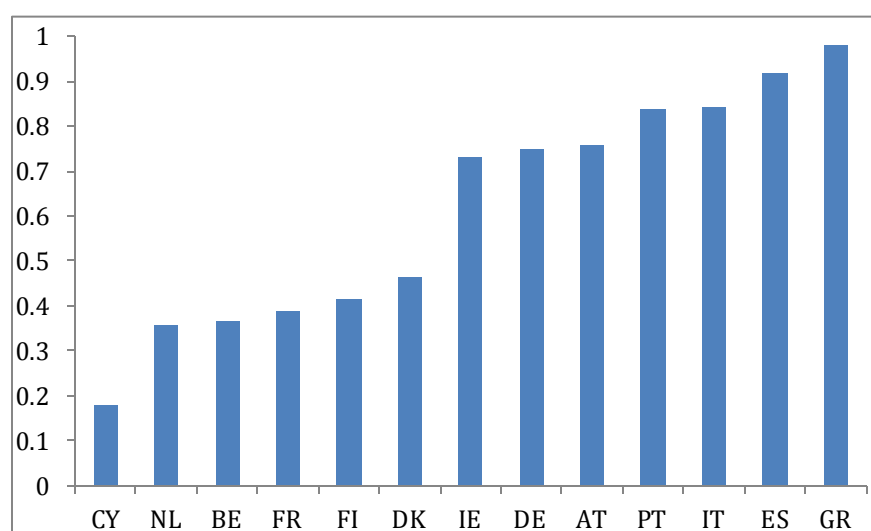
Securities Markets Program

Yet the simple categories of this table are far blurrier in real life. Concerns on the quality of banks' assets and/or the sustainability of their funding were subsequently fuelled by the lack of banking sector

resolution/restructuring regime, and compounded by stress tests that failed to provide transparency in a credible fashion. Ultimately, banking systems within EMU are still nationally regulated and supervised despite the tentative reforms implemented following the De Larosiere report<sup>3</sup>. Banks on the continent are therefore still European in life and national in death<sup>4</sup> and worries over their demise can extend financial banking distress across border due to the high degree of financial integration and interconnectedness.

The banking crisis subsequently fuelled a fiscal crisis in parts of Europe due to the reduced growth prospects and the anticipated costs of banks' bailouts, a common feature of banking crisis which on average are followed by a more than 80% increase in real stock of government debt and a substantial drop in growth.<sup>5</sup> The banking crisis brought to the fore structurally weak fiscal situations that were left unnoticed due to surveillance failures (Greece), domestic misallocations of credit resulting in housing booms and unsustainable fiscal revenues (Ireland, Spain), or weak potential growth reducing substantially fiscal spaces (Portugal, Italy).

**Figure 1: Home bias in banks' sovereign debt portfolios**



Source: EBA stress test 2011

The fiscal crisis fed back into the banking crisis because banks continue to hold large amounts of the debt of their own sovereign as shown in Figure 1, which shows the percentage of national debt in total sovereign debt holdings of banks in a particular country. Recent evidence shows that far removing this risk, the LTRO has increased this in a number of countries. Thus, the resulting double feedback loops between sovereign debt crises and banking crises shown in Figure 2 above that calls for better tools to deal with bank stress ex ante and bank failures ex post. In the absence of such tools, the central bank is forced to provide liquidity over and

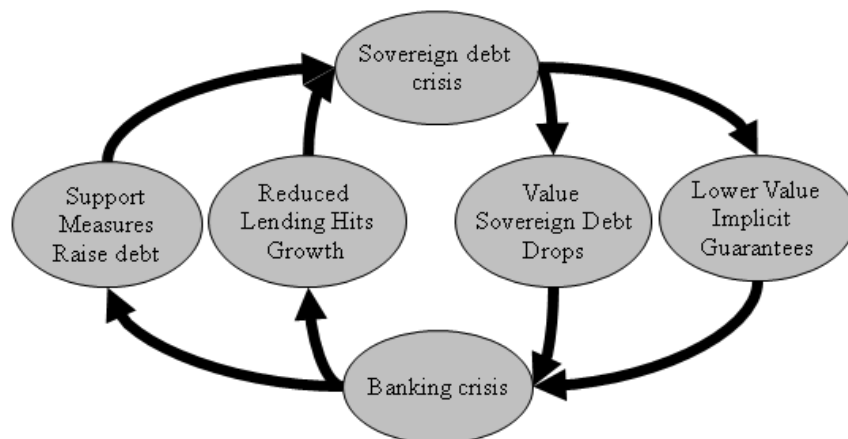
<sup>3</sup> See [http://ec.europa.eu/internal\\_market/finances/docs/de\\_larosiere\\_report\\_en.pdf](http://ec.europa.eu/internal_market/finances/docs/de_larosiere_report_en.pdf)

<sup>4</sup> A variant on Charles Goodhart saying 'banks are international in life, but national in death'.

<sup>5</sup> See *This Time Is Different: Eight Centuries of Financial Folly*, Carmen M. Reinhart & Kenneth S. Rogoff, Princeton University Press, 2009

above what its lender of last resort function would suggest and to effectively engage in support to potentially insolvent banks that amounts to quasi-fiscal interventions.

**Figure 2: Feedback loop between banking and sovereign debt crises**



Finally, the banking crisis and fiscal crisis have merged into a balance-of-payment-crisis within a monetary union, as argued by Merler and Pisany-Ferry (2012). Countries under stress are basically suffering from two types of imbalances, (i) classic current account imbalances that need to be restored through improvements in exports and (ii) imbalances stemming from the capital account that can be the result of a banking crisis and/or growing concerns over the integrity of the monetary union which effectively reintroduces the foreign exchange risk. This second aspect of the balance of payment crisis takes the form of reversal in capital flows.<sup>6</sup>

Due to the nature of the currency union, the capital outflows from periphery countries towards the core have resulted in the build up of large imbalances in the payment system of the European Central Bank rather than currency depreciation as would have happened if countries had a flexible exchange rate. The shock is therefore effectively being absorbed by the internal payment system of the ECB, which in essence has played the role of a safety net.

Safety nets addressing solvency and liquidity problems represent an effort to provide countries or banks with insurance against the different shocks discussed above. A fundamental issue in the economics of insurance is the trade-off between insurance and moral hazard.<sup>7</sup> When in order to reduce bankruptcy probabilities countries or banks have to make costly efforts that are non-contractible or unobservable to providers of insurance such as Central Banks, rescue funds, the IMF, or other countries, unconditional insurance will diminish efforts. Reducing moral hazard then requires that insurance payments are made conditional on restructuring efforts or even that insurers directly interfere in bank management or government policies. If

<sup>6</sup> See also Carney (2012), Giavazzi and Spaventa (2011), Sinn (2012)

<sup>7</sup> Another issue is the risk-bearing capacity of the insurer, see Tirole (2012)

liquidity support is not conditional on implementing policies that improve solvency, then the likelihood that liquidity support will turn into a permanent transfers increases.

Moral hazard has to be considered seriously, in particular in the context of a monetary union where countries tend to have far greater ability to transfer costs to the other members, and where financial contagion provides greater bargaining power to debtors and assistance recipients. IMF support-programs are routinely tied to conditionality in the form of quantitative targets on key policy variables and structural policy measures. EFSF and ESM support also requires conditionality along similar lines. However, targets may be subject to renegotiation. This is especially problematic for too-big-to-fail banks and EMU program countries, whose failure would result in serious spill over risks to other economies (see Tirole [2012]).

The safety nets that have been designed progressively over the last 2 years still struggle to find the right balance between restructuring and fiscal adjustments but they should provide a framework for negotiating this trade-off with two objectives in mind: the first one is to limit moral hazard and the second is to reduce contagion risks. Over the last couple of years, Europe has made some progress, albeit slowly, on these trade offs but important gaps remains and the current safety nets architecture leaves important shortcomings that require improvements on the current tools and new instruments.

## **2 The first attempt: the EFSF and its discontent**

### **a. The origins of the European financial safety net**

The EFSF was initially created in May 2010<sup>8</sup> with a capacity of 440 billion euro<sup>9</sup>. It was established as a Luxembourg private company and had roughly 30 million euro of initial capital, issued in the form of registered shares owned by euro area member states in proportion to their contribution key<sup>10</sup> but decisions on loan facilities, disbursements of loans are subject to unanimous consent.

There was an initial debate about the credit rating that the EFSF should seek to secure. Some AAA member states appeared concerned with the idea of having a potential competitor for their domestic issuance<sup>11</sup> but eventually conceded that to maximize its effectiveness, it would be suitable to achieve the best possible credit rating for the EFSF. In order to ensure triple-A rating for the bonds issued by the EFSF, the initial agreement required that countries issue unconditional and irrevocable guarantees equal to 120% of the amounts borrowed by the EFSF, in addition to two other credit enhancement measures, a cash reserve and a loan-specific cash-buffer were imposed on the basis of the amounts issued by the EFSF.

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<sup>8</sup> Regulation from the Council of May 2010, <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:118:0001:0001:EN:PDF>  
<sup>9</sup> The joint EFSF-EFSM nominal capacity at that point was 500 billion euros.

<sup>10</sup> In principle, the contribution key equals the ECB capital key, but can change when countries step out of the guarantee because they are unable to shoulder the additional debt. In that case a guarantor becomes a 'stepping-out-guarantor'. As a result, the contribution key can vary between EFSF debt issues.

<sup>11</sup> Authors' informal conversation with several national debt management offices

Taken together, these three measures ensured that each of the bonds issued by EFSF was covered in full by the sum of guarantees issued by AAA countries and the money set aside in the cash buffer and cash reserve.<sup>12</sup> However, they also meant that the EFSF's initial lending capacity was well below the headline figure of 440 billions, which was in fact the sum of guarantees by member states. The table below shows the contribution key of the contributing countries.

The standard EFSF loan procedure euro area member states (EAMS) makes formal request to other members. The European Commission then negotiates a program including conditionality in cooperation with the IMF. The support program will be monitored by the commission, the IMF and the ECB (the "troika"). The support program is conditional on policy measures set out in a Memorandum of Understanding between the requesting country and the commission along with a letter of intent sent to the IMF.

In June 2011, European leaders agreed to increase the size of the EFSF to 780 billion to ensure an effective lending capacity of 440 billion. The cash buffer and cash reserve requirements were dropped, but the over-guarantee percentage of 120% was raised to a maximum of 165% to sustain the AAA rating instead. The EFSF has been assigned Aaa by Moody's, AAA by Fitch Ratings and the EFSF a AA+ rating by Standard & Poor's.

**Table 2: EFSF contribution key vs. ECB capital key**

Country	New EFSF Guarantee Commitments (€ m)	New EFSF contribution key (%)	EFSF Amended Guarantee Commitments (€ m)	EFSF amended contribution key (%)	ECB Capital key (%)	Share of ESM capital (%)	Paid-up capital to the ESM (€ m)
Austria	21,639	2.78	21,639	2.99	1.94	2.78	2,220
Belgium	27,032	3.47	27,032	3.72	2.43	3.47	2,773
Cyprus	1,526	0.2	1,526	0.21	0.14	0.20	157
Estonia	1,995	0.26	1,995	0.27	0.18	0.26	205
Finland	13,974	1.79	13,974	1.92	1.25	1.79	1,434
France	158,488	20.31	158,488	21.83	14.22	20.32	16,260
Germany	211,046	27.06	211,046	29.07	18.94	27.06	21,652
Greece	21,898	2.81	-	0.00	1.96	2.81	2,247
Ireland	12,378	1.59	-	0.00	1.11	1.59	1,270
Italy	139,268	17.86	139,268	19.18	12.50	17.86	14,288
Luxembourg	1,947	0.25	1,947	0.27	0.17	0.25	200
Malta	704	0.09	704	0.10	0.06	0.09	72
Netherlands	44,446	5.7	44,446	6.12	3.99	5.70	4,560
Portugal	19,507	2.5	-	0.00	1.75	2.50	2,001
Slovakia	7,728	0.99	7,728	1.06	0.69	0.99	793
Slovenia	3,664	0.47	3,664	0.51	0.33	0.47	376
Spain	92,544	11.87	92,544	12.75	8.30	11.87	9,494
<b>Total</b>	<b>779,783</b>	<b>100</b>	<b>726,000</b>	<b>100</b>	<b>69.9705</b>	<b>100</b>	<b>80,000</b>

Source: Authors, ECB, EFSF

<sup>12</sup> The bonds are eligible as ECB collateral

### *Operational expansion of the EFSF*

In July 2011, European leaders<sup>13</sup> agreed to extend the scope of the EFSF substantially to include primary market purchases, secondary market purchases, precautionary intervention, and banking sector recapitalization measures. The European Council conclusions of July 21<sup>st</sup> indeed stated:

*“To improve the effectiveness of the EFSF and of the ESM and address contagion, we agree to increase their flexibility linked to appropriate conditionality, allowing them to:*

- act on the basis of a precautionary programme;*
- finance recapitalisation of financial institutions through loans to governments including in non programme countries ;*
- intervene in the secondary markets on the basis of an ECB analysis recognizing the existence of exceptional financial market circumstances and risks to financial stability and on the basis of a decision by mutual agreement of the EFSF/ESM Member States, to avoid contagion.*

*We will initiate the necessary procedures for the implementation of these decisions as soon as possible”.*

This point marked an important evolution of the EFSF. To restore a country's access to the market, it was decided that the EFSF would be able to buy sovereign debt in the primary market for countries already subject to a macroeconomic adjustment program or a precautionary program. Support would then be limited to 50% of the issued amount and would remain conditional on the terms set out in the Memorandum of Understanding.

In order to allow the EFSF to act more preemptively, and with the intention of lowering interest rates paid by countries or to ensure liquidity in debt markets, the EFSF could also buy debt in secondary debt markets. This intervention is available for countries in a macroeconomic adjustment program, but also to countries that are not in such a program. In that case, a member state can request support, following an ECB report identifying risks to the euro area and assessing the need for intervention. In exceptional cases, the ECB can also issue a warning on its own initiative in order to precipitate interventions without a formal request by a member state. However, secondary market purchases are subject to ex ante eligibility criteria, which should be defined in the European fiscal and macro-economic surveillance framework.

To prevent interest rates from rising, the EFSF can extend assistance to countries before they face difficulties in primary debt markets. This can take several forms including precautionary conditioned credit line<sup>14</sup>,

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<sup>13</sup> See [http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ecofin/123979.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/123979.pdf)

<sup>14</sup> See guidelines on precautionary programmes released in november 2011.

[http://www.efsf.europa.eu/attachments/efsf\\_guideline\\_on\\_precautionary\\_programmes.pdf](http://www.efsf.europa.eu/attachments/efsf_guideline_on_precautionary_programmes.pdf)

enhanced conditions credit line, or an enhanced condition credit line with sovereign partial risk protection<sup>15</sup>. The first type of aid is only available for countries with economic and financial situation deemed sound. Because precautionary programs have to be instigated quickly, they are subject to a lighter request procedure.

Finally, the EFSF can also act to contain risks that are not fiscal in nature and that threaten to undermine financial stability more broadly, by extending loans such that the recipient member state recapitalizes and restructure its banking sector. The EFSF will, however, not lend to or recapitalize directly financial institutions. Recapitalization measures are subject to restructuring or resolution of the financial institutions in compliance with European state-aid regulation. But because bank recapitalization may require rapid action, the procedural requirements are somewhat lighter<sup>16</sup>. Note that even before this change, the EFSF could already allocate part of a standard macro-economic adjustment package for supporting a country's banks<sup>17</sup>, which has happened already in Ireland.

Yet the crucial difference following the July 2011 change is that the EFSF can actually act before the banking crisis becomes a sovereign crisis. In the previous *modus operandi*, one needed to wait for a member state to lose market access following a banking crisis before the EFSF could act. Now, the banking stress can be addressed irrespective of whether the member state has stretched its borrowing capacity to the maximum. This is a decisive change for the EFSF but it remains imperfect in the sense that the EFSF can better address banking crises but can hardly prevent them from spilling over and become sovereign fiscal crises. The EFSF should be able to act preemptively (ie. before banking stress weakens the fiscal position excessively), but also to act directly by taking direct equity stakes and proceed with the restructuring of the banking system. The current *modus operandi* allows a member state to resist direct intervention in its own banking system so long as its fiscal position isn't irremediably undermined and these delays generally contribute to deepen the banking crisis, and turn what could be a standard banking crisis into a crisis of public finances. These delays are the source of additive increases in the cost of financial assistance and should therefore be reduced.

Yet despite these improvements, with a spreading crisis risking to engulf Italy and Spain at the end of the summer 2011, it became clear that the EFSF was inadequate to deal with fiscal crises in large countries and that the size of the EFSF should therefore be expanded. Policymakers focused their efforts on the improvements on the size rather than the scope. In particular, they tried to devise ways to increase the EFSF's firepower while not committing more fiscal resources. The proposal after the eurozone meeting of 26 October 2011<sup>18</sup> mentioned two possibilities to leverage the EFSF: the SPV-model and the insurance model,

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<sup>15</sup> See <http://www.efsf.europa.eu/attachments/faq.en.pdf>

<sup>16</sup> See the guideline [http://www.efsf.europa.eu/attachments/efsf\\_guideline\\_on\\_recapitalisation\\_of\\_financial\\_institutions.pdf](http://www.efsf.europa.eu/attachments/efsf_guideline_on_recapitalisation_of_financial_institutions.pdf)

<sup>17</sup> This was for example used in the case of Ireland when it was agreed that Ireland would use €35 billion out of the total €85 billion of the Irish program to stabilize the banking sector. Reference of Irish program MoU/IMF review.

<sup>18</sup> Reference see [http://www.consilium.europa.eu/uedocs/cms\\_data/docs/pressdata/en/ec/125644.pdf](http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/125644.pdf)

which we review in Annex I. In essence these models try to repackage and parcel out credit risk in a way similar to tranching CDOs, thus achieving a bigger bang-for-the-buck by tailoring to investors' differing risk appetites. Overall, we regard such effort as unsuitable to convincingly stabilize large countries' debt markets because investors are fleeing from the very tail risks to which the leveraging models still leave them exposed.

## **b. A mechanism for contagion**

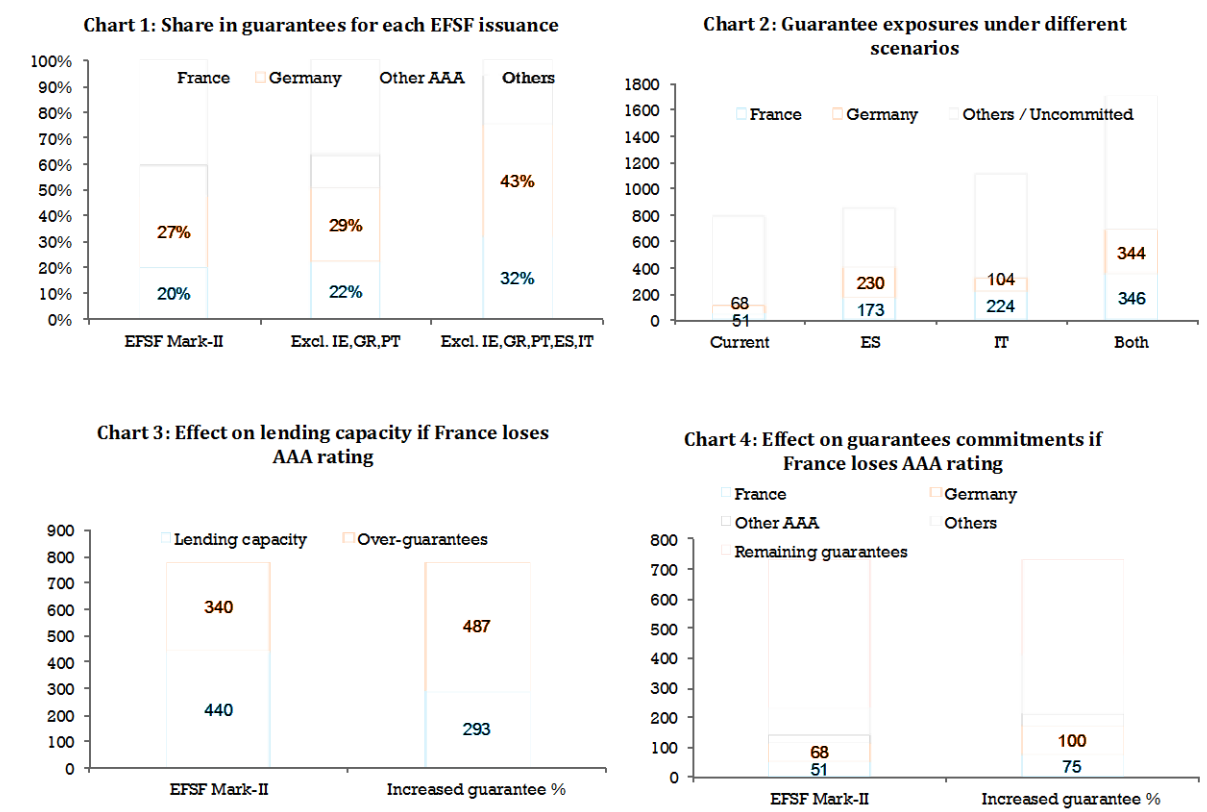
Any insurance mechanism carries with it the possibility of contagion because insolvency of the insuree may threaten the creditworthiness of the insurer.

As it is built, the EFSF's effectiveness relies on low funding costs relative to the country that is assisted. This, in turn, requires the existence of a sufficiently large number of strong core euro area issuers to support peripheral countries in crisis. Consequently, one can envisage a scenario whereby recourse to the EFSF would sequentially weaken one country after another once contagion is set in motion until it hits core countries. Should Italy need to be rescued using the EFSF for instance, French guarantees would be called, which would increase the size of France's gross debt, thereby weakening France's fiscal position and potentially giving rise to heightened market tensions. The EFSF architecture, instead of being a vector of stability, would then become a vector of instability by being transformed into an incubating vehicle for financial distress. The conclusion of this cascading effect would be that the strongest member would end up providing support to all the rest of the euro area, which would exceed its own fiscal capacity.

The EFSF agreement states that member countries experiencing financial difficulties may request not to participate in guarantees of further debt issuances by the EFSF. The guarantees already provided by stepping-out guarantors (those that need to request financial assistance) are not revoked but redistributed amongst the remaining member states. Therefore when a country steps out of the EFSF, it also affects the over-guarantee percentage that is required to secure a AAA rating of the EFSF. The 165% maximum guarantee ensures that AAA countries provide guarantees equal to 102% of the total amount to be guaranteed. Hence if any AAA country were to lose its rating, it would in all likelihood lead to the EFSF losing its AAA rating on new issuances unless guarantees of the others AAA countries are increased substantially as presented below.

For instance, as we illustrate here (chart 3), when France lost its AAA rating, the capacity of the EFSF to lend without losing the AAA-rating was reduced from 440bn to 293bn. For the EFSF to keep the AAA rating and to maintain the same lending capacity, one possibility would be to increase Germany's guarantee by 50% (chart 4).

**Figure 3: EFSF contributions under various scenarios**



Source: EFSF, author calculations

Indeed, if Spain and Italy and come to need EFSF assistance, the burden on the remaining countries would increase rapidly<sup>19</sup>. If both Italy and Spain end up requiring financial assistance, Germany will end up guaranteeing 43% of each new EFSF issuance (chart 1) or some 344bn euro in actual guarantees (chart 2).

The downgrade of France has changed the nature and the outlook for the EFSF by reducing quite substantially its effectiveness. Indeed, either the EFSF has to agree to live with a rating below AAA which might eventually challenge its ability to borrow money on the best possible terms, or it might reduce the amount of borrowing it can actually finance without forcing other AAA guarantors to increase substantially their contributions. In essence, the EFSF was intended to function as a regional lender of last resort (LOLR) but remains short of the essential features of a real LOLR.

<sup>19</sup> Note that some of the 1st Greek program disbursement will be delivered through the EFSF. We also assume that 2/3 of the second Greek program (109bn) will be delivered through the EFSF. This amount could end up being larger if the IMF contribution is smaller than 1/3 or if the Private Sector Involvement mechanism doesn't achieve the proposed 90% participation rate.

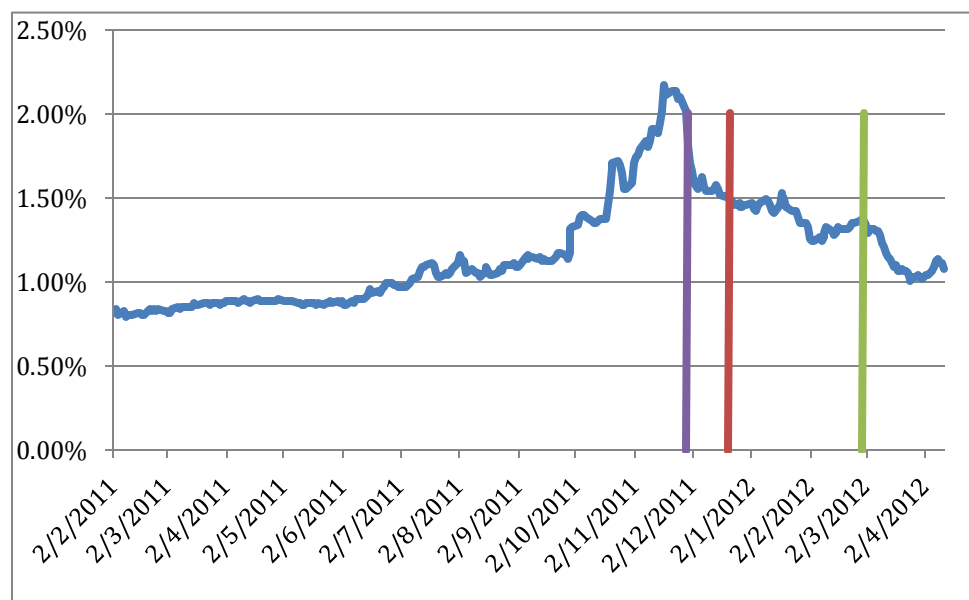
### c. Funding risks

There is an apparent, and now tested, assumption that the EFSF would always be able to fund itself on very good terms. In fact, this largely depends on the perceived strength of its guarantors as well as on the perceived risks associated with its operations. As mentioned before, these low funding costs are crucial to the effectiveness of the EFSF.

In theory, the interest rate paid by the EFSF should be below the weighted average spread of its AAA-rated guarantors, because EFSF debt is fully covered by guarantees from AAA-rated sovereigns and in addition benefits from guarantees from non-AAA-rated member states as well as from the borrower's repayment obligation.

This logic may however be flawed for three reasons: (i) Investors may worry about the integrity of the EMU altogether and guarantees from AAA-rated members would provide very limited protection against losses arising in such a catastrophic event. (ii), the logic underpinning the rescue mechanism may be called into question. Indeed, as we explained above, the limited nature of the resources vested in the EFSF challenges its ability to fulfill its role. (iii), the European financial safety net can be subject to self-fulfilling runs itself.

**Figure 4: Spread between the EFSF and Germany**



Source: Datastream, authors' calculations

As a result, an EFSF having to issue large amounts of securities to raise funds may be subject to acute risk, causing the funding costs of the EFSF to rise. Under intense financial stress, it may not be able to secure such funding cheaply and quickly. The various leveraging options discussed actually don't reduce these risks but rather reinforce them. Figure 3 above illustrates the fragility of the EFSF. It shows the difference between the

yield to maturity of the second EFSF bond issued in February 2011 and a German government bond with a similar maturity date. This difference is rising steadily, up until the end of November (when agreement on extension of EFSF was reached<sup>20</sup>). Also shown on the chart are the first and the second LTRO. Also after the second LTRO, the spread between the EFSF and Germany dropped markedly.

The EFSF needs to be as protected as possible from experience liquidity constraints itself. One way to address this issue would be for the EFSF to be less dependent on markets and be able to rely on a lender of last resort, for example by allowing funding directly or indirectly via a monetary authority. The debate surrounding the ESM implicitly acknowledges this by considering awarding of a banking license in order to be able to access ECB liquidity. Of course this raises a number of other questions about the monetary and distributional consequences of a more active ECB involvement.

### **3 The ESM and the road to a more complete safety net architecture**

#### **1. Improvements in the ESM set up**

The ESM<sup>21</sup> came as a result of long negotiations between member states some of whom first refused the very principle of a permanent rescue mechanism, which they thought would encourage moral hazard. It was designed to address some of the shortcomings of the EFSF, in particular its limited nature in time and scope.

A first important difference between the EFSF and the ESM is that the latter will have some 80bn euros in capital paid into the mechanism upfront. Whereas the creditworthiness of the EFSF will fluctuate with the market value of its assets (claims on EAMS) and the strength of guarantees provided by the EFSF contributors, the large and fixed equity of the ESM will make its creditworthiness less volatile. This will improve the ESM creditworthiness, reduce its borrowing cost and will allow conducting immediately a number of operations (interventions, loans) without the need to first issue debt in the market. This should make the ESM more effective, allowing action on very short notice and it would reduce its immediate funding challenges although the question would remain if the amounts deployed increase beyond 80bn. Yet, over and above this first threshold, the mechanism would still need to raise additional funds in financial markets and it would then face fairly similar risks to that of the EFSF.

As a second difference, the risk profiles of the EFSF and ESM are quite different. This arises because the financial backing by the EMU countries is structured in a different way. Indeed, article 8(5) explicitly limits the liability of each member country to its portion of the authorized capital stock at its issue price. Also, each and every member would need to respond to capital calls including countries undergoing financial stress or under program. There is no such thing as a country revoking its commitment to provide capital into the ESM

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<sup>20</sup> See [http://www.efsf.europa.eu/attachments/efsf terms of reference,maximisingthe capacity.pdf](http://www.efsf.europa.eu/attachments/efsf%20terms%20of%20reference,maximisingthe%20capacity.pdf)

<sup>21</sup> ESM Treaty <http://www.european-council.europa.eu/media/582311/05-tesm2.en12.pdf>

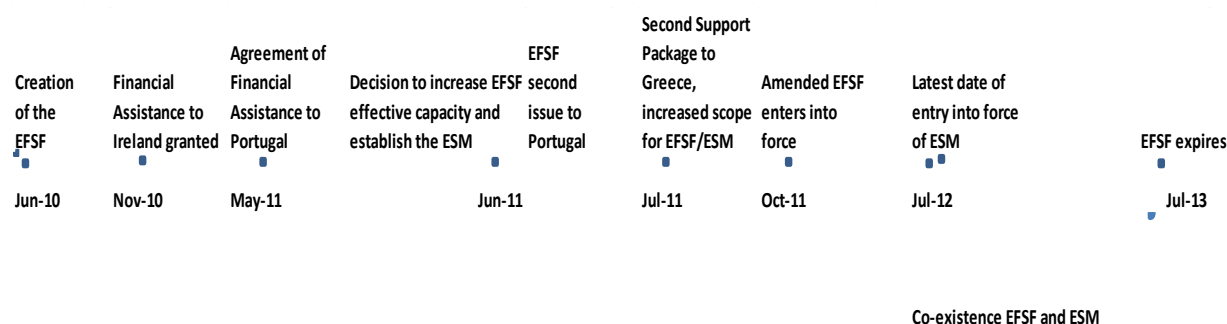
because of its own financial circumstances, including cases where a program is required. As a consequence, there is no mechanism to forgive a country from contributing and transfer the burden onto others as it is the case with the EFSF. Note that this is largely cosmetic because in reality, a country under program would only be able to contribute to the ESM's capital call if it received sufficiently large financial assistance from the ESM in order to do so. In anticipation of such a situation article 4(8) states that if a ESM member fails to respond to a capital call, it would lose its voting rights on the ESM board.

The EFSF's overcollateralization allowed in principle it to maintain its firepower constant through cascading increases in the guarantees. This isn't the case with the ESM for which capital contribution are perfectly fixed. In practice, this means that the effective firepower of the ESM will shrink if a large member is due to call for assistance thereby severely undermining the ability fo the ESM to truly act as a lender of last resort.

All in all, a number of financial risks seem to have been better taken into account in the design of the ESM, which altogether helps to strengthen its structure but it remains imperfect.

In the context, of an increase in the IMF's resources, European governments came under pressure to strengthen their own<sup>22</sup> "firewall". A few options were considered which essentially revolved around the transition period between the EFSF and the ESM. The solution finally chosen allowed to temporarily combining the financial resources of the two vehicles<sup>23</sup>.

**Figure 5: From the EFSF to the ESM**



## 2. After the ESM

As we have seen above, the ESM still leaves important holes in the framework that fail to make the current safety net architecture effective in at least three particular case: (i) when the crisis is essentially financial and dedicate and specific banking sector intervention is required, (ii) when the country undergoing stress is so large that it threatens the ability of the ESM to lend in sufficient size and (iii) when the external adjustment

<sup>22</sup> See for instance the Communiqué of the Ministerial G20 in February 2011 :

<http://www.telegraph.co.uk/finance/financialcrisis/9107453/Mexico-City-G20-Communique-full-text.html>

<sup>23</sup> <http://www.ft.com/cms/81dd3226-7441-11e1-9e4d-00144feab49a.pdf>

appears impossible. On these three dimensions, there needs to be more work to establish a credible financial safety net infrastructure.

#### **a. Towards a European banking resolution mechanism**

The ESM could be the embryo or the coordinating device of a real banking crisis resolution framework<sup>24</sup> but still falls short of that.

The ability of the ESM to deal with banking crises remains based on the model of the EFSF interventions. As constructed, the ESM would not be able to act preemptively and directly in order to deal with banking crises. The current channeling of the funds through a member state potentially increases the chances of disagreement and misalignments of interests where a member state would seek to protect its national banks despite the risks to its creditworthiness and despite the risks to financial stability for the union as a whole. The ESM doesn't seem to have laid out clear enough rules of engagement that are critical to overcome the flaws of the EFSF in this regard.

Indeed, although the ESM does allow for a program targeted at the financial system, it is hard to see how this can be addressed separately from an integral banks restructuring and resolution framework. When faced with banks in distress that are not yet in default, regulators face a choice between several measures<sup>25</sup>, including recapitalization if the bank as it is can be viable, or transferring some assets to a bad bank to ring fence the primary sources of insolvency, restructuring creditors' claims capital needs are large, temporary nationalization, and disbanding and sale to private parties. Restricting the ESM's role to a pure financier creates a bias towards blanket recapitalization potentially undermining the broader restructuring efforts and increasing the risk that insolvent banks will be bailed out at great cost. Additionally, the recapitalization or resolution of large European banks involves taking into account cross-border external effects. For all these reasons there needs to be an institution with the executive authority (and the associated accountability structure) that can take those decisions in the broader interest of the union as opposed to that of one particular member state.

Also, a resolution framework is necessary but insufficient and the 1929 crisis has taught that most banking crisis can be curtailed by a credible commitment to make depositors whole<sup>26</sup>. But when the deposit guarantee is threatened by the actual or perceived creditworthiness of the guarantor, the financial system loses an essential stabilizing force. In a number of countries, the uncertainty surrounding national deposit guarantee

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<sup>24</sup> See the proposals made by the European Commission on this matter, which have so far been largely ignored.

[http://ec.europa.eu/internal\\_market/consultations/docs/2011/crisis\\_management/consultation\\_paper\\_en.pdf](http://ec.europa.eu/internal_market/consultations/docs/2011/crisis_management/consultation_paper_en.pdf)

<sup>25</sup> A good example of a bank restructuring and resolution framework is the US system of prompt corrective action managed by the FDIC put in place in 1991 [ie. after the Savings and Loan crisis of the 1980s].

<sup>26</sup> See A Historical Perspective on Deposit Insurance Coverage, Christine Bradley, FDIC Banking review

[http://www.fdic.gov/bank/analytical/banking/2000dec/brv13n2\\_1.pdf](http://www.fdic.gov/bank/analytical/banking/2000dec/brv13n2_1.pdf) and The Great Depression and the Friedman Schwartz hypothesis, Lawrence Christiano, Roberto Motto and Massimo Rostagno, ECB Working Paper, march 2004  
<http://www.ecb.int/pub/pdf/scpwps/ecbwp326.pdf>

scheme is a source of intra-EMU deposit flight and becomes an important destabilizing feature of the system. Providing a backstop to national guarantee schemes or a supranational guarantee of all deposits would contribute tremendously to reduce cross border financial flight to safety. But such a mechanism involves an agreement to pool fiscal resources and a degree of trust of national banking system that can probably only be achieved through a real federal supervision of national banking systems. The current and future resolution of the European banking crisis will force to formalize a real strategy that will ultimately, through trial and error, lead to a proper banking union<sup>27</sup>. But in its absence, the euro area will remain incomplete and prone to financial distress and its related costs will continue to cripple the economic recovery.

#### **b. Dealing with large countries**

The discussion about the size of the European firewall misses the important point that even with all its improvements, the ESM, as it is structured, is unsuitable to come to the rescue of a large country like Italy or France. As a consequence, the entire European safety net architecture not only leaves holes because it fails to address some aspects of the crisis convincingly enough (banking crisis, balance of payments) but also because it potentially leaves large countries outside of the umbrella.

In this context, the only way for large countries to overcome a deep fiscal crisis without default would rest with large provision of liquidity, which, in the current context could only be provided by the central bank. This option can be achieved directly through large interventions but in a monetary union with completely mobile capital, its redistributive consequences are potentially very important. The other option would be to grant the ESM access to the discount window of the ECB, which would be an indirect, conditional and more politically transparent form of central bank intervention. Member states can also resort to common debt issuance that would deal both with the liquidity and solvency issues. The general idea is to create debt instruments that can pool the credit risk of multiple countries and allow transfers by a mechanism of joint and several guarantees. Beyond the reduction in national risk premia, the creation of supranational debt instrument would have substantial benefits for the banking system by increasing the supply of safe assets and reducing the links between sovereign and their own banking systems. In fact, several proposals have been put forward<sup>28</sup> but there are a number of political, legal challenges before member states agree to pool fiscal sovereignty in a relatively permanent and infinite fashion.

There is no clarity on the best proposal and sequence for implementation yet. In addition, economists' understanding of intra-country risk sharing mechanisms is still in its embryonic stages. Yet some form of common debt issuance would help in the short-run to ensure large countries access to debt markets at favorable conditions without ECB involvement. In addition, it may be an instrument to prevent the occurrence of future crisis in the long-run. Eurobonds can therefore play two roles, an immediate one in the crisis

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<sup>27</sup> See The euro crisis and the new impossible trinity, Jean Pisani-Ferry, Bruegel Policy Contribution, January 2012

<sup>28</sup> For a more thorough discussion of the merits of each proposals, see Claessens, Mody and Vallee (2012).

resolution and a medium to long term one to stabilize the EMU. It could also be a way to partly cut the feedback-loop between sovereigns and their banks, discussed in section I, if banks hold eurobonds instead of national debt. But all these proposals need to go hand in hand with new institutional provisions and reinforced fiscal surveillance to address moral hazard issues.

### **c. Transfers inside the monetary union and the lack thereof**

Countries can deal with solvency shocks in several ways. For countries that have their own currency, part of the risk can be absorbed through exchange rate movements. In contrast, countries in a monetary union lack such an adjustment and therefore need much stronger financial safety nets that can in some cases, amount to net financial transfers to the recipient countries (in the case of concessional lending, or restructuring for instance). But the euro area, has been originally designed with the understanding that transfers shall be avoided and legal provisions were put in place to limit them (Art. 125 TFEU). Consequently, the debate on safety nets revolves largely around a discussion on the suitability and need for shock absorbing financial transfers between member states. To avoid this debate, policymakers have originally focused on internal adjustment or private sector involvement in debt restructuring. But nonetheless several risk-sharing arrangements were created. These include:

- (i) The provision of financial assistance to countries in need including through bilateral, EFSF or ESM loans, that provides member states with time to adjust by borrowing at concessional interest rates.
- (ii) The provision of liquidity at lower interest rates to banks through the ECB's non-standard monetary policy operations that include low rates, long term and broadened pool of collateral (Long Term Refinancing Operations, Emergency Liquidity Assistance).
- (iii) The funding of banks in peripheral countries through the internal payment system of the ECB (target 2). This constitutes another important shock absorption mechanism since capital flight may still occur even within a banking union.<sup>29</sup> But the rising target 2 balances create a contingent liability for the eurosystem and therefore implicit transfers.
- (iv) Debt restructuring of private sector creditor but also possible restructuring of official claims in the future.
- (v) Loans provided through the ESM for the purpose of restructuring of banks and direct equity investment in troubled banks<sup>30</sup> in the future.

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29 Such capital flight inside the monetary union should not be problematic for banks so long as the central bank can intermediate their cross-border funding, which is currently the role played by mounting imbalances in the internal payment system of the monetary union.

30 See Statement of the Euro Area Summit on June 29th 2012.

All of these mechanisms involve a degree of risk-sharing between countries, while at the same time optically limiting as transfers as much as possible. Tirole (2012) draws a distinction between limited “ex-post solidarity” largely designed with a self-serving intention to avoid contagion and “contractual solidarity” that creates formal modes of insurance. The arrangements that were created largely rely on the latter and were primarily designed with transitory liquidity problems in mind and not to address solvency problems that require more explicit insurance mechanisms. European policymakers continue to avoid confronting the political challenges associated with setting up financial safety nets that can ultimately be understood and used as formal “contractual solidarity” mechanisms. But there is a clear trade-off between these potential transfers and the stability of the monetary union. European governments need to provide more clarity on the level of transfers they are prepared to accept to ensure a stable monetary union, a failure to do that would threaten the stability and ultimately the integrity of the euro area<sup>31</sup>. Indeed, the history of currency union break ups illustrates that the origin of such break ups are the product of an inherent political disagreement over the amount and scope for transfers inside monetary unions. The flipside of an absence of such “contractual solidarity” mechanisms, is the acceptance that countries may default and seek alternative adjustment routes. One option would be a framework allowing members to orderly leave the currency union. Yet there are limited historical experiences of variable geometry currency unions. More importantly, the mere possibility of a country leaving a currency union tends to limit greatly the benefit of such a monetary union by reducing de facto capital mobility, and will make such a union inherently unstable.

As a result, a more complete architecture for financial safety nets should address the banking, fiscal and external aspects of a shock with permanent credible instruments to deal with both transitory and permanent shocks.

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<http://europa.eu/rapid/pressReleasesAction.do?reference=DOC/12/7&format=HTML&aged=0&language=EN&guiLanguage=en>  
31 According to Friedman adoption of the euro ‘would exacerbate political tensions by converting divergent shocks that could have been readily accommodated by exchange rate changes into divisive political issues.’ See <http://www.project-syndicate.org/commentary/the-euro--monetary-unity-to-political-disunity->

**Figure 6: Future EMU safety net arrangements.**

Crises	Liquidity		Solvency
Banking	<ul style="list-style-type: none"> <li>•Emergency Liquidity Assistance</li> <li>•Non conventional OMO</li> <li>•supranational guarantees of deposits</li> </ul>	Common issuance of debt	<ul style="list-style-type: none"> <li>•European Recapitalization / restructuring framework</li> <li>•Bail- in</li> </ul>
Fiscal	EFSF/ ESM/ IMF program		<ul style="list-style-type: none"> <li>•ESM</li> <li>•Private Sector Restructuring</li> <li>•Official Sector Restructuring</li> </ul>
Balance of Payments	<ul style="list-style-type: none"> <li>•Emergency Liquidity Assistance</li> <li>•Target 2</li> </ul>	Direct or indirect fiscal transfers	Euro exit

In particular, the fiscal aspects of the crisis need to be strengthened over and above what the ESM can achieve today. In this sense, introducing a form of common debt issuance would both address the liquidity and solvency aspects by allowing both short term and more permanent transfers between member states. These transfers should happen as smoothly as possible and would, by the same token, reduce the need for ex post transfers via private and official sector restructurings and defaults. In addition, debt overhangs both in the private sector and public sector are problematic and might require a more systematic restructuring mechanism. The banking aspects of the crisis management have recently progressed with the policy debate on the creation of a banking union. In addition, the Spanish program could be seen as a tentative and embryonic model for a supranational recapitalization/restructuring mechanism. Finally, the current budgetary framework needs to be complemented in order to allow more risk sharing mechanisms, possibly through the pooling of shock absorbing policies at the European level. Klau and Guerot (2012) for instance discuss European unemployment insurance as an example. A failure to devise these complementary elements of a complete financial safety net framework would result in greater instability for the euro area potentially threatening its integrity.

## 4 Conclusions

The most recent European Council conclusions, allowing the ESM to recapitalize banks directly thus creating an embryonic bank resolution mechanism, confirm the gradual adaptation and evolution of the financial safety net arrangements. But more changes are required to provide a comprehensive and coherent financial safety net framework. The ESM, as currently designed, does improve meaningfully the ability to raise and deliver financial assistance to a troubled member state. But it does not, however, amount to an ultimate backstop because it remains a fiscal pooling of resources based on the limited liability of its contributors and it is therefore limited in size and scope. Avenues to provide the ESM with a contingent access to monetary financing in a direct or indirect manner would make the overall construct more solid and credible and may paradoxically reduce the probability that it would need to be used.

Beyond this, the overall construct and robustness of European safety nets needs to be improved along several dimensions.

The first category of improvements regards the financial sector and banking crises. As Pisani Ferry et al. (2012) noted, the ability to provide assistance to a troubled banking system is a necessary step forward to severe the adverse feedback loops between financial distress and the sovereign debt crisis. A European banking resolution framework and its articulation with the ESM is an essential element of a complete financial safety net that would be able to deal with banking crises. This would involve a resolution authority, a supranational guarantee of deposits and as a result a move towards a real federal supervision.

The second is the ability to deal with a fiscal crisis in a large country. If monetary resources are unavailable, the common issuance of debt is a way to secure access to financial markets at levels of interest rate that do not threaten debt sustainability. There are several options to achieve this aim and more progress needs to be made to decide the best option or sequence of options to achieve the maximum economic benefit while minimizing institutional frictions. In addition, it is important to realize that the common issuance of debt would have important repercussions and consequences for the conduct of fiscal policy in fair as well as in stormy weather and would therefore require substantial governance and possibly treaty changes.

Thirdly, the stability of the monetary union critically depends on the political understanding that a stable monetary union necessarily involves some degree of risk sharing. The current crisis shows that internal adjustment and private sector involvement may not suffice to restore solvency. Balance of payments crises can occur inside a monetary union but these are manageable as long as mechanisms exist to absorb asymmetric shocks and as long as the internal payment system of the monetary union remains

unencumbered. Limiting these transfers or failing to design them in a way that is economically effective and incentives compatible may threaten the integrity of the monetary union and could lead to its break up<sup>32</sup>.

Finally, the financial safety architecture involves a number of different stakeholders both inside and outside Europe. As a result, the respective role and cooperation of these different stakeholders need to be organized both for the sake of accountability and effectiveness. Indeed, having multiple parties involved can be useful but is also a potential important source of disagreements and discord. The joint engagement of the IMF, the ECB and the European Commission requires a clearer framework than the one proposed in the ESM Treaty, which leaves excessive room to interpretation and brinksmanship. All in all, the division of labour and the relations between the various stakeholders in the provision of financial assistance (European Commission, European Central Bank and International Monetary Fund) creates room for disagreements, which could undermine the credibility and the effectiveness of the entire safety net architecture.

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<sup>32</sup> Odling-Smee, John, Wolf, Thomas, Coats, Warren, Citrin, Daniel, Cheasty, Adrienne, [1994], Financial Relations among countries of the former soviet union, IMF Economic Reviews

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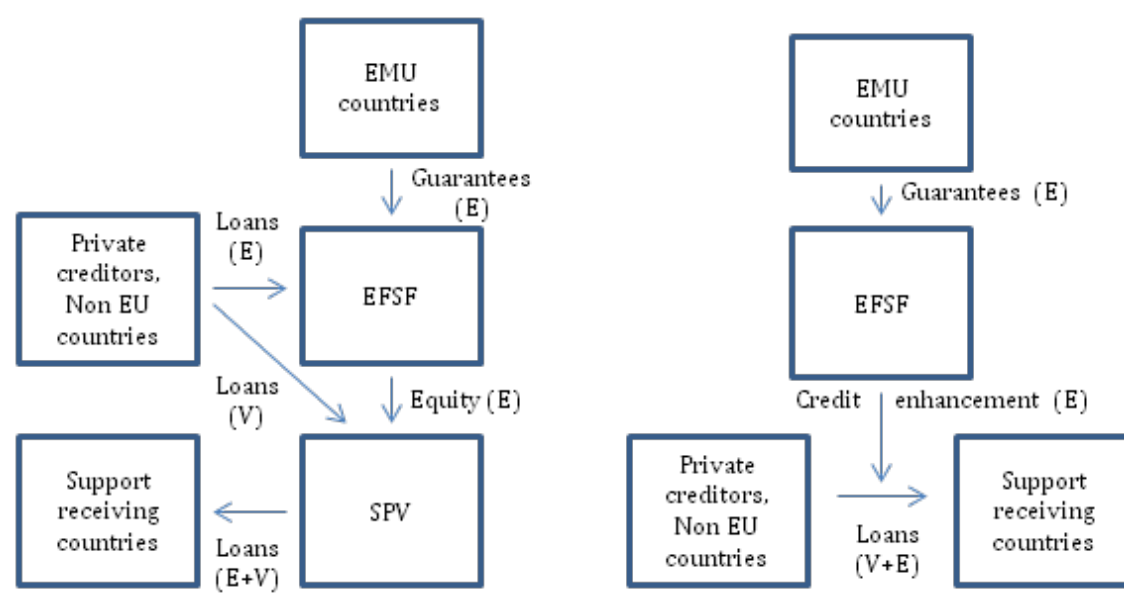
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## Annex I: Critical assessment of leveraging models

In the SPV model, the EFSF would create a special purpose vehicle (SPV) in each given country that would buy European debt –where the EFSF would provide the equity tranche of the vehicle and hence absorb the first proportion of losses incurred by the vehicle. In essence, in this context, the guarantees provided by the EMU countries are used as a form of equity to attract outside funding from private creditors or countries such as China, Qatar etc. This funding could take the form of senior debt or a participation capital. Participation capital would be more senior than the equity tranche but would still be junior to the senior debt. According to the proposal, with this method, the capital available to the EFSF could be leveraged four to five times. The underlying idea is that of tranching of financial risks used in CDO structures, where credit risk is redistributed by carving out cash-flows from multiple debt obligations into tranches with different levels of seniority.

Creditors of the SPV are exposed to risk originating from the support receiving countries, but less so than the holders of the equity tranche –the EFSF. When the equity buffer is exhausted, the creditors' loans will not be repaid in full. With a leverage ratio of four to five, this would only happen when the EFSF is fully used and a recipient country cannot pay back more than 20 to 25% of its debt. As a result, this SPV structure is marred with challenges, starting with the ability to attract financiers for the tranche that has more risk than the own debt of the EFSF.

Figure 7: SPV model (LHS) and insurance model (RHS)



Source: Authors and EFSF

The alternative structure is closer to a classic insurance where EMU countries' guarantees are to be used as credit enhancement for the loans given by the private sector to support receiving countries. The EFSF would then issue partial protection certificates (credit enhancements) that would be sold along with the new debt

of European governments. Buyers of such debt obtain the possibility to purchase a credit insurance certificate from the EFSF. This certificate only offers a pay off if the owner also has a corresponding amount of government bonds. The certificate pays out in case of a credit event and would provide first-loss protection of 20%-30% of face value.<sup>33</sup> The goal is to lower the interest rate paid by these countries by guaranteeing a percentage of the losses on the bonds issued. These certificates can be issued immediately and do not require any market funding. Funding only becomes an issue once a credit event occurs.

### *The effects of leveraging*

In the leveraged SPV proposal, the financiers of the special purpose vehicle will face losses that exceed the first-loss tranche provided by the EFSF. If they provide funds to a special purpose vehicle set up to provide funds to any given EAMS, they will be on the line for risk that the loss incurred exceeds the 20% level (if the leverage ratio is 5) and the 25% level (if the leverage ratio is 4).

At a fixed level of borrowing from the recipient, the EFSF shareholders bear a smaller nominal burden because private creditors also now run risk originating from the support receiving countries. However, the purpose of using an SPV model is to leverage the available resources and provide more support, i.e., to lend out more. Hence, for a fixed level of fiscal resources committed, because of the leverage, more resources can be mobilized for EAMS in need but in total, this increased level of lending will increase the credit risks taken by both the EFSF guarantors as well as its financiers. Historical experience shows that the average haircut relative to the market value of debt instruments, range between 13% and 73% with most restructurings around 25-35 percent<sup>34</sup>, with different types of instruments taking different levels losses. Measured relative to the face value of debt, losses are much higher. Thus, if the EFSF would provide lending to a country directly, i.e. without using any leverage option, it could reasonably expect to face a loss exceeding 230% on its assets if the recipient country had to default. Under a leverage scenario, however, losses would be much higher. Suppose, for example that the EFSF has used all its capacity to lend to countries using the SPV model. Because for each country the EFSF would hold the equity tranche and given sovereign risks are highly correlated, it would incur a loss of 100% on its asset.

Trying to leverage the EFSF also has indirect effects on financial markets. First, providers of liquidity in last resort should signal its unwavering belief in the basic viability of a country. In the context of a run, markets need to be convinced that solvency is not a risk and that liquidity risks can be managed. Indeed, if the run on a country is self-fulfilling, the EFSF can use its signaling power to help coordinating beliefs and realize a more

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<sup>33</sup> An important point of discussion is whether the market thinks the definition of a credit event can be changed or narrowed ex post. The discussion on the Greek debt swap, which was eventually considered a credit event, has created considerable uncertainty on the matter. Whether or not a particular event constitutes a credit event is determined by the ISDA committee but there is to this day a degree of uncertainty as to how this committee could decide in certain circumstances and the degree to which it is impartial and free from financial and political pressures.

<sup>34</sup> See, e.g., Federico Sturzenegger, Jeromin Zettelmeyer, Haircuts: Estimating investor losses in sovereign debt restructurings, 1998–2005, *Journal of International Money and Finance*, Volume 27, Issue 5, September 2008, Pages 780-805.

benign equilibrium with lower interest rates<sup>35</sup>. But such a coordination of beliefs requires that lenders stand ready to provide enough support themselves in case markets fail to do so.. Choosing to leverage the EFSF signals that fiscal resources necessary to coordinate beliefs are limited in nature. As a result of this construction, the lenders require some degree of confidence from market participants taking part in the SPV for it to work. This inconsistency can only be broken by a true lender of last resort that doesn't need the private sector and that can provide unlimited resources to avoid a bad equilibrium. Indeed, in the multiple equilibrium model, the primary function of the lender of last resort is to credibly rule out the bad equilibrium such that markets converge the low equilibrium.

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<sup>35</sup> Multiple equilibria have primarily been studied in the context of exchange rates and balance of payment crises but the same logic apply to interest rates in the context of debt crises. See Obstfeld, Maurice, 1996. "Models of currency crises with self-fulfilling features," *European Economic Review*, Elsevier, vol. 40(3-5), pages 1037-1047, April.