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Research Report

Dealing with debt crises in the Eurozone: Evaluation and limits of the European stability mechanism

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and Security Affairs

Sebastian Dullien and Daniela Schwarzer

Dealing with Debt Crises in the Eurozone

Evaluation and Limits of the
European Stability Mechanism

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**Dealing with Debt Crises in the Eurozone:
Evaluation and Limits of the European
Stability Mechanism**

The new sovereign debt crisis management mechanisms of the euro area are taking shape. In 2013, at the latest, a European Stability Mechanism (ESM) will take over from the temporary rescue mechanisms. These had been established in spring 2010 to shield Greece and other member states from financial markets and to reduce the risk of self-fulfilling financial crises and this year they have already undergone their first reform.

The core of the temporary rescue mechanism is formed by the European Financial Stability Facility (EFSF) and the initial design of the permanent mechanism ESM largely followed this set-up. But on 21 July 2011, the Heads of State and Government of the euro area agreed to substantially enlarge the scope of instruments of the EFSF. This means that the ESM founding treaty, which implemented the key ESM decisions of the European Council of March 24/25, 2011, will need to be changed even before it has been ratified.

It is now largely undisputed that the euro area needs a permanent crisis management system that is capable of resolving liquidity and solvency problems of its member states. But despite the recent amendments it is very unlikely that the current agreements on the EFSF will be sufficient to tackle the current challenges and to prevent future ones. Hence the opportunity of re-opening the ESM negotiations should be seized to complete it with further instruments and procedures. Beyond this reform of its founding Treaty, the ESM should be embedded into an over-arching and consistent economic governance framework.

Recent theories of financial market crises help identify criteria for such a framework. Firstly, it should be able to distinguish between *liquidity problems*, i.e. short-term payment difficulties, and *solvency problems*, i.e. the inability of a country to repay its debt. Emergency loans can only help with liquidity problems. In this case, it is not useful to involve creditors, as an extension of loans or the threat of a haircut provokes market reactions and hence destabilises the situation further. Countries with solvency problems meanwhile have to have their debt restructured, as new loans merely increase the burden of debt without doing

anything to put the country's finances in order. The EMS provides for this distinction, and makes the involvement of the creditors in the event of a liquidity crisis optional. In the course of renegotiating the ESM Treaty, this latter instrument should be maintained, but should be made available solely for solvency crises.

A second decisive point for the design of the rescue mechanisms is the framing of conditions according to which money is lent. If interest rates on such loans are too high, they will fail to solve the liquidity problems and will only postpone a self-fulfilling financial crisis, not prevent it. According to the first ESM Treaty, interest rate should be at two to three percentage points above market rates. Against the background of recent theories on self-fulfilling financial crises, this interest level is clearly too high.

Thirdly, the mechanism should prevent problems of moral hazard. Rather than achieving this by excessively high interest rates, as is commonly argued, strict conditionality should be attached to potential loans. Furthermore, the possibility of a sovereign default should be included for tackling the problems of over-indebted states. While the ESM in principle recognises this need, the chosen instrument, Collective Action Clauses, will only be implemented too late and are unlikely to be efficient in their application.

Fourthly, so that the mechanism should prevent self-fulfilling financial crises, a stability fund should be equipped with a sufficiently large volume in order to be able to provide credit at short notice as well as to larger member states. The ESM with its lending capacity limited to € 500 bn falls short of this requirement, particularly if Spain or Italy need financial assistance.

Given these weaknesses, the current mechanisms for governing and preventing sovereign debt crises should be further developed and completed. The overall framework should include the following elements:

- ▶ A **permanent liquidity fund** to provide loans to eurozone members experiencing acute payment difficulties, with clear conditions and strict budget monitoring. Like IMF loans, loans from this fund would take priority over other debts of the affected state so the fund would have no fear of default.
- ▶ A **bank recapitalisation fund** which can directly inject capital into banks and allows for a restructuring of public debt of one of the eurozone countries without having to fear a systemic banking crisis. This task could also be integrated into the liquidity fund, but it should remain a different function in its own right.

- ▶ An **insolvency procedure for eurozone countries** on top of the collective action clauses to provide an orderly method for restructuring sovereign debt. This could be the forerunner for global insolvency rules.
- ▶ **Common euro-bonds for up to 60 percent of the public debt of eurozone member states** which would considerably reduce the risk of self-fulfilling financial crises and which would compensate the problem of the EMS's insufficient lending capacity. Countries would conduct any borrowing above that limit on their own account with the corresponding risk premiums.
- ▶ Substantially **strengthened macro-economic and budgetary policy coordination** on the EU level based on sound democratic legitimacy.

These measures are designed to bring relief to the current situation and make further debt crises less likely. However, it is clear that without reducing imbalances a debt crisis is likely to reoccur. The case studies show that the degree of macroeconomic imbalances is an important factor when assessing solvency and liquidity and hence needs to be tackled for the long-term sustainability of the euro area.

The Theory: A Systematic Analysis of the Debt Crisis in the Euro Area

In order to evaluate the instruments employed by the EU to solve sovereign debt problems, it is useful to clarify the objectives they can serve.¹ That means, firstly, distinguishing between liquidity and solvency problems of countries with financing problems. Different instruments will be appropriate depending on the specific circumstances in the country concerned.

Insolvency vs. Illiquidity

Reasons why an economic actor – whether a business, a private household or a state – can find itself in payment difficulties may be a problem with solvency or with liquidity. “Solvency” means a situation where assets exceed liabilities, while “liquidity” is having sufficient available funds to meet immediate obligations.

It is perfectly possible for an actor to be solvent but not liquid, and such situations have been observed regularly in the course of the recent financial crisis. For a time certain financial institutions were practically unable to borrow short-term funds on the inter-bank market, even though their asset portfolio was quite solid. Selling assets was not an option because the market had frozen for many classes of securities and they could only have been sold at an enormous discount – which would then indeed have led to insolvency.²

1 In this study “emergency loan” refers to lending from other EU states, multilateral organisations or newly created institutions conducted outside the economic framework of profit and risk calculation prevailing in the financial markets.

2 Many economic models make no distinction between solvency and liquidity problems, because under the assumption of perfect information and market efficiency it is impossible for an actor to be illiquid yet solvent; it is assumed that assets can always be sold at their true value. But in the real world of information asymmetries businesses, banks and households are often unable to do so. The literature on the role of central banks, on the other hand, distinguishes explicitly between liquidity and solvency problems. See Douglas W. Diamond and Philip H. Dybvig, “Bank Runs, Deposit Insurance, and Liquidity”, *Journal of Political Economy* 91, no. 3 (June 1983): 401–19; Douglas W. Diamond, “Banks and Liquidity Creation: A Simple Exposition of the Diamond-Dybvig Model”, *Federal Reserve Bank of Richmond Economic Quarterly* 93,

A temporary loan is a useful measure for helping an actor suffering liquidity problems. The actor gains time to sell his assets at a normal price according to their value and liquidity is restored.

Actors with solvency problems, on the other hand, gain only brief respite through a temporary short-term loan, which can do nothing to resolve the underlying problem of over-indebtedness. This can only be accomplished by an insolvency process of the kind that most countries have for businesses and private individuals. An insolvency process seeks a settlement between debtor and creditors where the debtor’s obligations to his creditors are reduced to a point where he is once again able to participate normally in economic life. Ultimately, a “haircut” can also serve the interest of the creditors, because if the business survives they may stand to receive a greater proportion of their claims than if it is broken up. Alternatively, it may be decided to break up and sell off the bankrupt business and share the proceeds of liquidation among its creditors.

Assessing government payment difficulties

In the case of sovereign states, differentiating between solvency and liquidity problems is more complicated. For one thing, a sovereign state has no balance sheet where we can simply read a list of current assets. For another, the overall asset position for a government derives less from its stock of tangible and financial assets than from its present and future ability to collect taxes.

That ability has limits: above a certain level of taxation the tax burden suffocates economic growth, the tax base is eroded by tax flight, or a new government reduces taxes again. Furthermore, it is not possible to use all tax revenues to satisfy creditors’ claims because a state that cannot provide public goods, maintain public order and supply certain services will lose its legitimacy.

no. 2 (April 2007): 189–200, http://www.rich.frb.org/publications/research/economic_quarterly/2007/spring/pdf/diamond.pdf (accessed 25 May 2010).

There is still no generally accepted agreement on the limits of the tax burden or the minimum necessary degree of public sector activity, but it is possible to empirically estimate the politically viable level of interest payments as a proportion of the government budget. It makes a big difference whether interest flows to domestic or foreign creditors, with payments to domestic investors likely to cause less political resistance than a major ongoing outflow from the state budget to foreign creditors.

We can, however, still draw useful parallels with business economics when seeking to assess a government's payment difficulties. Leaving to one side the details of maximum tax ratio and necessary provision of public goods and services, a state can be regarded as insolvent if it is unable – under sensible assumptions – to serve its debt in the medium and long term, even if it were to undertake plausible changes in its tax, fiscal and spending policies.

A government is illiquid, on the other hand, if it merely has temporary problems raising the funds it needs to meet its obligations through the capital markets, but can repay its debt in the long term (with or without realistic changes to taxation and budget).

Countries that have their own central bank can avoid both insolvency and illiquidity as long as their debts are denominated in their own domestic currency, as they can always resort to printing money. If this instrument is used excessively the debt will be devalued through higher inflation rather than written off in a default.

The euro states, however, no longer have their own central banks with the ability to print money and access to the European Central Bank (ECB) is restricted by Article 127 of the Treaty on the Functioning of the European Union.³ So under the current regime, insolvency and illiquidity of eurozone members are both conceivable.

³ Article 127 states that "Overdraft facilities or any other type of credit facility with the European Central Bank or with the central banks of the member states (hereinafter referred to as "national central banks") in favour of Union institutions, bodies, offices or agencies, central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of member states shall be prohibited, as shall the purchase directly from them by the European Central Bank or national central banks of debt instruments".

Choosing appropriate instruments

The way payment difficulties are handled should depend on whether a government is assessed to be insolvent or illiquid. In the case of liquidity problems emergency loans – be they from other countries, the IMF, the EU, or other international institutions – can serve to bridge a certain period until the public finances have been put back in order through changes in national budgetary and economic policy or simply until investors' sentiment has changed again. A case in point would be the IMF's loan to Brazil in 2002, when the rising popularity of the presidential candidate of the Workers' Party, Luiz Inácio Lula da Silva, had shaken the confidence of the financial markets in the country's ability and willingness to pay its debts. The currency came under pressure and Brazil ran into acute difficulties raising new funds. What was at that point the biggest loan ever made by the IMF helped the country to survive until the elections were over.⁴ Today nobody would call Brazil's solvency into doubt.

If a government is genuinely insolvent an emergency loan can do nothing to change that, even with the best growth policies. Instead new loans merely increase the mountain of debt without any prospect of the payment difficulties ending (and often with little prospect even of the emergency loans being repaid). In that case a state bankruptcy is the right option, with payments on the state debt suspended at least for a time.

Past experience shows that over-indebted countries mostly perform significantly better economically after a sovereign default than those that continue to labour under an oppressive burden of debt.⁵ But currently there are no international arrangements for an orderly sovereign default.

⁴ For the events in Brazil in 2002 and a comparison with the Argentine crisis see Sebastian Dullien, "Währungsregime in Lateinamerika: Die jüngsten Krisen als Bankrotterklärung der orthodoxen Politikempfehlungen", in *Lateinamerika Jahrbuch* 2003, ed. Klaus Bodemer, Detlef Nolte and Hartmut Sangmeister (Frankfurt am Main: Vervuert, 2003); for contemporary assessments of the situation in Brazil see John Williamson, *Is Brazil Next?* International Economics Policy Brief 02-7 (Washington, D.C.: Institute for International Economics, August 2002).

⁵ After foreign debt repayments were stopped in 2001, Argentina was able to record several years of significantly stronger growth than its then highly indebted neighbour Brazil.

Self-fulfilling financial crises and the logic of emergency loans

The logic of the self-fulfilling financial crisis is closely bound up with the question of state liquidity and solvency. Early theories assumed that financial crises were triggered by unsustainable economic policies combined with excessive debt or inflation.⁶

Second-generation currency crisis models⁷ – also known as models of self-fulfilling financial crisis – reveal a more subtle mechanism.⁸ According to these “multiple equilibria” models the expectations of the market decide whether a country enters crisis: If all market participants expect that a country will be able to plough on with its economic policy, market conditions remain friendly and the country escapes crisis. But if market actors fear a crisis is coming they withdraw their money – and cause it to occur. Depending on economic fundamentals such as the current level of debt and the budget deficit, a state will be in one of three different situations:

- ▶ If the fundamental data are sound there will be no crisis.
- ▶ If the fundamental data are hopeless there will definitely be a crisis.
- ▶ If the fundamental data are between the two extremes multiple equilibria are possible and the expectations of market participants will be self-fulfilling.

⁶ Examples include Paul Krugman, “A Model of Balance-of-Payments Crises”, *Journal of Money, Credit, and Banking* 11, no. 3 (August 1979): 311–25; Robert P. Flood and Peter M. Garber, “Collapsing Exchange-Rate Regimes: Some Linear Examples”, *Journal of International Economics* 17, no. 1–2 (August 1984): 1–13. For a helpful overview see Giancarlo Gandolfo, *International Finance and Open-Economy Macroeconomics* (Berlin: Springer, 2002), chapter 16.

⁷ The models were originally about currency crises. Yet they can also be applied to fiscal crises in a fixed-exchange-rate regime or a monetary union, a path followed here.

⁸ Maurice Obstfeld, “Models of Currency Crises with Self-fulfilling Features”, *European Economic Review* 40, no. 3–5 (April 1996): 1037–47, applies such a mechanism to fixed exchange rates, while Harold L. Cole und Timothy J. Kehoe explicitly propose a mechanism for bringing state debt under control in “A Self-fulfilling Model of Mexico’s 1994–1995 Debt Crisis”, *Journal of International Economics* 41, no. 3 (November 1996): 309–30.

What this means for the eurozone

The interest rates a country has to pay are a direct function of the market’s expectations concerning possible payment difficulties. But at the same time, higher interest rates will exacerbate a country’s financial troubles. *In extremis*, the mere expectation of payment difficulties is enough to multiply the cost of borrowing and create actual payment difficulties. If a country has so little debt and such a small budget deficit that there is no question about its ability to repay its debts, the possibility of a self-fulfilling crisis is as good as excluded because the country can easily survive an increase in borrowing costs. In the European context countries like Germany and the Netherlands fulfil this criterion.

The second-generation crisis models are interesting for countries in the grey zone: Under constant market conditions they can service their debt but rising interest rates could make the public debt unmanageable. This currently applies to a series of EMU members with large budget deficits: alongside Greece it encompasses Portugal, Spain, Italy and Ireland.

The enormous impact that changing market expectations can have on the fate of individual states was demonstrated by the Greek experience in the early months of 2010 before the passage of the first rescue package. By April the annual interest rate on short-term Greek borrowing had reached almost 20 percent, an increase of 10 percentage points within just a few months. If all Greece’s existing debts had been rolled over at that rate its debt service would have risen from 6 to 18 percent of gross domestic product (GDP) and – even without additional state spending or tax reductions – the budget deficit would have risen from an estimated 8 percent of GDP in 2010 to about 20 percent. At that point more than half of all tax revenues would have been consumed by interest payments, efforts to consolidate the budget to achieve the Maastricht criteria of a deficit of not more than 3 percent of GDP would moreover have had to be tripled.

Although Ireland, Portugal and especially Spain have much smaller government debts, a sharp increase in the effective interest rates to 15 percent would drive their budget deficits towards 20 percent of GDP and make any consolidation unrealistic. All three countries are therefore, in principle, vulnerable to self-fulfilling financial crises. For Italy, the situation would be even more dire as the outstanding stock of debt is larger relative to GDP and a sustained increase

in interest rates would thus have a larger impact on the budget.

Stabilising market expectations

If there is a danger of a self-fulfilling financial crisis, emergency loans are particularly important. If investors can be persuaded to expect that the affected country will continue to service its debt, the cost of borrowing falls and the country is able to cope with its debt burden. In this best-case scenario only a limited part of the promised assistance need actually be taken up, because access to the private capital markets is retained. If expectations cannot be stabilised soft loans can only achieve modest success at best. Borrowing from the private capital markets remains prohibitively expensive and the country slides into permanent dependency on soft loans, because the disadvantageous conditions of private financing would mean immediate insolvency. In this case the cost of assistance payments will end up being a good deal greater than would have been necessary under better management of market expectations.

This calls into question an oft-cited argument: namely, that one should try to avoid making sweeping promises of emergency loans so as to maintain pressure on the country in crisis to balance its budget. The danger inherent in this position is that the conviction that sovereign default is imminent may prevail rather than market conditions stabilising in a favourable equilibrium. This belief on its own can be enough to bring a financial crisis to a head and in the end call into question even the repayment of the emergency loan.

Another widely discussed demand can also clearly be shown to be mistaken with this model: If the cost of the emergency loans is tied to current market rates for loans to the affected state,⁹ they would be absolutely ineffectual. They would differ in no respect from normal loans on the capital markets, which can contribute nothing to stabilising market expectations in a favourable (non-bankruptcy) equilibrium. Because market interest rates are driven up by the expectation of default, emergency loans must be granted at considerably lower rates. Market interest rates might reflect the default risk of such a loan under the as-

sumption of efficient markets. However, with efficient financial markets, problems of illiquidity paired with solvency are difficult to imagine. Hence, if one follows the argument of a possible liquidity crisis, one has to conclude that loans at (or close to) market interest rates cannot help the beleaguered government. For this reason the IMF provides loans on terms considerably lower than market interest rates.

Fortunately, this argument has finally been recognised by the Heads of State and Governments. Originally, Greece, Ireland and Portugal were charged interest rates around 6 percent which was both higher than what the EFSF had to pay for its refinancing and significantly higher than what the crisis countries had to pay before the crisis. As it became evident that this penalty made the return to private capital markets more difficult for the countries concerned, the euro-zone summit of July 21st, 2011, decided to lower the interest rates for the loans to Greece, Ireland and Portugal and countries can now borrow close to the financing costs of the EFSF instead of charging significant penalties of several hundred basis points.

Charging the old higher rates could have – and might have to a certain extent – defeated the purposes of the emergency loans: It clearly makes it more difficult for them to stabilise market expectations. In the end, charging a punitive rate leaves only the choice of either default or one-off transfers to repay the debt by other euro-member states. In both cases, costs to tax payers in the other member states would be significantly higher.

The requirements of successful emergency loans to fend off a self-fulfilling financial crisis can be summarised as follows:

- ▶ The emergency loan must be put in place quickly, before the market-driven rise in interest rates further exacerbates the financial situation of the affected country.
- ▶ The interest rate charged on the emergency loan must be low enough not to exacerbate the financial situation of the affected country by itself.
- ▶ The loan facility must be large enough to cover the affected country's borrowing needs for the foreseeable future.
- ▶ The terms of loan facility must be clearly and unambiguously defined in order to exclude speculation about whether it will actually be granted.

⁹ Which is how certain observers interpret the phrase “risk adequate pricing” in the *Statement by the Heads of State and Government of the euro Area*, 25 March 2010.

External imbalances and competitiveness

In the debate over the highly indebted eurozone members, their difficult external situation is often mentioned alongside the precarious state of their public finances. Portugal, Greece and Spain did indeed run enormous current account deficits in the years leading up to the crisis, sometimes exceeding 10 percent of GDP. These were associated with a lack of competitiveness: Between the advent of the monetary union and the onset of the global financial crisis Portuguese, Spanish and Greek competitiveness – measured in terms of nominal unit labour costs – worsened dramatically compared to the rest of the eurozone. Such a decline has never been observed in the United States (at regional or state level) or for a state within Germany.

However, an automatic connection between current account deficits and large budget deficits cannot be proven. Although the “twin deficit” theory (that budget deficits cause current account deficits) was bandied around in the 1980s and 1990s, the Spanish experience provides a convincing example where this causality was absent. Before the crisis, Spain enjoyed budget surpluses but still ran large deficits in foreign trade. In the Greek case too, enormous pre-crisis trade deficits exceeding 10 percent of GDP coexisted with relatively moderate budget deficits at levels under 4 percent.

There is however another connection between the current account imbalances in the eurozone and these enormous budget deficits. A permanently high current account deficit with weak economic growth indicates a structural lack of competitiveness that must be rectified before the affected country can achieve growth through rising exports. But because the financial crisis has generally left both the public and the private sector in these countries highly indebted, economic growth cannot recover without the stimulus of exports. In turn weak growth means low tax revenues and therefore poor prospects for restoring ravaged public finances. But economic growth is imperative to slow the rise in the debt/GDP ratio, a point that is underlined by both the mathematics of the dynamics of debt¹⁰ and Germany’s experience with consolidation policies since 2001.

Another connection between budget deficits and current account deficits is that each increases in-

debtedness in a particular sector. While a budget deficit increases the total amount of government debt, a current account deficit increases the liabilities of all economic actors (private households, businesses, public sector) to the rest of the world.¹¹ If a budget deficit coincides with a current account deficit, the affected government will probably have borrowed largely from abroad. In this case there are several reasons to suggest that the state debt is less sustainable. Firstly, the government has less leverage over the assets of bond-owners. Where government securities are domestically held a wealth tax can at least partially reduce the level of debt, whereas this route is unavailable where the creditors are foreign. Secondly, it is less likely that domestic creditors will suddenly cease lending. Investors generally tend to invest their wealth in their own country (“home bias”), so as long as a country’s private sector saves and wants to invest its money strong demand for domestic bonds is highly likely. Thirdly, domestic resistance against a sovereign default or debt restructuring is likely to be more energetic where most bonds are held by domestic parties who – unlike foreign creditors – have voices and votes in the national political process. Where debt is largely domestically held, a restructuring is above all a redistribution between different groups within the country. Such a step is less attractive to a government than restructuring foreign debt, which represents a redistribution from foreign creditors to domestic groups.

The difference between domestic and foreign public debt could – alongside its relatively smaller budget deficits – also explain why Italy’s government for a rather long period of the current crisis only came under comparatively little pressure even though Italy’s debt makes up a considerably larger proportion of GDP than Spain’s or Portugal’s. Unlike the latter two, Italy’s budget deficit is currently funded largely by domestic lenders and the country’s current account deficit is comparatively small. Had Italy a debtor structure between foreign and domestic liabilities such as

¹¹ Strictly speaking this is true only if a country’s net foreign asset position is already negative. If it is positive it first sinks before the country gets into a position of net debt. In the debate about the five problem states (the PIIGS) this aspect is incidental because by 2007 they all already had negative net foreign asset positions which have probably worsened since then in view of their current account deficits. See the updated data in Philip R. Lane and Gian Maria Milesi-Ferretti, “The External Wealth of Nations Mark II: Revised and Extended Estimates of Foreign Assets and Liabilities, 1970–2004”, *Journal of International Economics* 73 (November 2007): 223–50.

¹⁰ Eduardo Ley, *Fiscal (and External) Sustainability*, MPRA Paper 13693 (Munich: University Library of Munich, 2009).

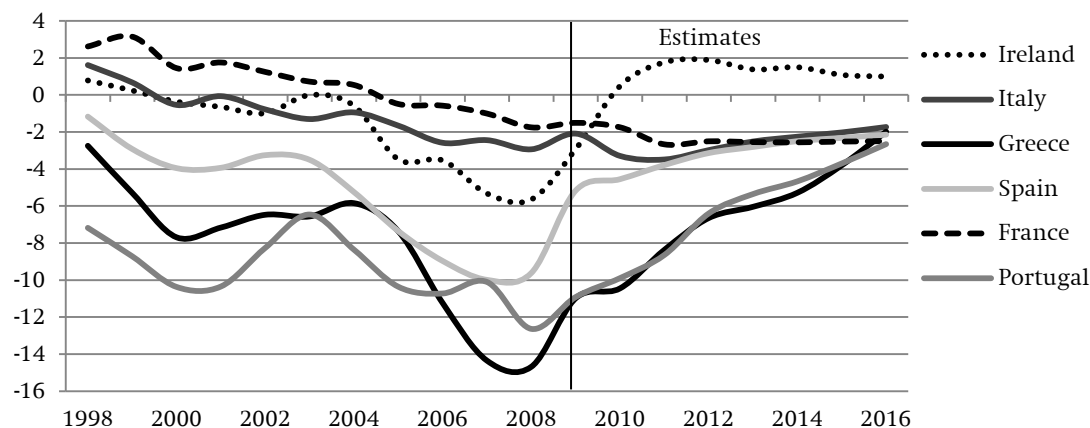
Spain, one could have expected it to have been hit by the adverse market expectations much earlier and much more strongly.

In a nutshell: If a country wishes to return to a sustainable level of debt it must first correct excessive

external imbalances, because with an overvalued currency economic growth is hardly going to reach the rates necessary to put public finances in order. Moreover, where external deficits are large, the level of viable debt is smaller.

Figure 1

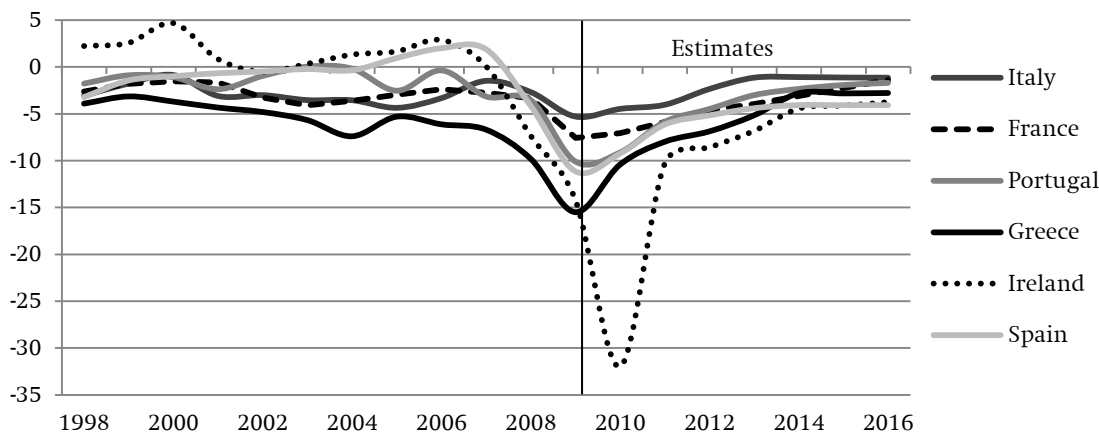
Current account balances of six selected member states 1998–2016 (percent of GDP)



Source: International Monetary Fund, *World Economic Outlook Database*, September 2011.

Figure 2

General government net lending/borrowing 1998 to 2016 (percent of GDP)



Source: International Monetary Fund, *World Economic Outlook Database*, September 2011.

The Empirics: Reviewing Crisis Management and Long-term Mechanisms

The history of sovereign debt crisis management in the euro area is now roughly one and a half years old. It is a history of failed attempts to solve the crisis. In the following, the major steps of crisis management and simultaneous governance reform are reviewed against the background of the theory of self-fulfilling financial crises and conclusions are drawn with regard to the question why the attempts failed to deliver the expected outcome.

The €110-billion Greek rescue package of April 2010

Before the first culmination of the crisis in spring 2010, many commentators said that the EU member states should refuse to help Greece. Even without an EU-aid package, the critics said, payment difficulties were unlikely or any default would come without uncontrollable negative effects on EU member states like Portugal and Spain and the banking systems of other member states.¹² Contagion effects such as the market turmoil in the last week of April and the first week of May 2010 contradict this position.

It is now clear that the spike in bond yields observed in the markets have the potential to push other countries into default and that the IMF alone – because of its limited credit resources and the link to each country's IMF quota – would have been too small to stabilise the situation.

Hardly anyone now challenges that a major sovereign default in southern Europe could have been even worse for the European banking system, whose capital base had been weakened by the U.S. subprime crisis. As well as direct write-offs on defaulted bonds there would have been indirect losses on loans to banks in Greece, Portugal and Spain that hold large holdings of their national bonds, and Spanish, Portuguese and Greek businesses would have found themselves unable

to pay their bills, themselves no longer receiving payments from their own public sector. In the spring of 2010, the danger of spread to the other countries was even more acute than it is now, as at that point, no larger rescue package for other countries existed and hence any liquidity problems could have quickly spiralled out of control. Moreover, financial institutions were probably ill prepared for a sovereign default in the euro area as this had for a long time not been deemed possible. As the heads of state and governments of the eurozone realised these problems in the spring of 2010, they quickly passed a first rescue package for Greece, which together with the IMF and the European Commission had a headline volume of €110 bn, which was topped up by a second rescue package in 2011 with a volume of €109 bn.

According to our theoretical considerations presented above, it is questionable whether Greece should have received a loan. As is shown later in the debt simulation and as it is increasingly recognised by most experts, Greece has more of a solvency problem than a liquidity problem. Thus, an emergency loan would not be the right instrument to solve this problem. However, policy makers were trapped between a rock and a hard place: A Greek default was unacceptable as the risk of contagion was too large and an emergency loan was the wrong answer from a theoretical point of view.

Given the large risks associated with contagion, the rescue package for Greece actually made sense in order to buy time and to put in place more durable institutions for liquidity support, which has happened with the EFSF and later the ESM and subsequent alterations in operating procedures and instruments, and the instalment of a debt restructuring procedure.

The second rescue package for Greece of 21 July 2011 can be given a much more critical evaluation: There is in fact more and more evidence that Greece has a solvency problem with the recession deepening in Greece and tax revenue collapsing (see country analysis below). In this case, liquidity help does not bring real relief, only debt restructuring would. But in fact, the euro area has wasted the time since the first rescue package of April 2010 on providing conditions

¹² See for example Henrik Enderlein, "Griechenland muss sich selbst helfen", *Süddeutsche Zeitung*, 9 March 2010, 2; Heribert Dieter, *Die internationalen Finanzmärkte stellen die Eurozone auf die Probe: Risiken einer Rettungsaktion für Athen*, SWP-Aktuell 19/2010 (Berlin: Stiftung Wissenschaft und Politik, February 2010).

under which debt restructuring with limited contagion can actually take place.

The €750-billion safety net of May 2010

The situation in the financial markets deteriorated shortly after the first Greek rescue package. On 7 May 2010, the spreads between Greek, Portuguese, Spanish and Irish bonds and the benchmark German bond yield hit new highs. The cost of insuring loans to the problem states against default rose dramatically – indicating speculation on precisely that event. On Wall Street trading in Greek bonds fell sharply, taking with it not only other southern members of the currency union, but also French state debt. According to the then Bundesbank President Axel Weber, German Bunds were the only euro area government security still trading normally on the afternoon of 7 May in New York.¹³ Next, banks started refusing to accept bonds of the affected eurozone countries as collateral.¹⁴ The money markets threatened to freeze up again as banks became wary of lending to each other. Bank failures were dangerously close. Drastic losses on the stock markets followed, especially for financial institutions.

In reaction to these developments, the EU put together its €750-billion safety net of loans and loan guarantees available to all euro area member states in May 2010. Its components satisfy the aforementioned criteria better than the initial Greek package:

- ▶ A €60-billion emergency fund, EFSM, guaranteed by the EU budget.
- ▶ Up to €250 billion from the International Monetary Fund.

¹³ See statements by Axel Weber to the Bundestag budget committee on 19 May 2010, Stenographisches Protokoll, 21. Sitzung, Protokoll 17/21, http://www.bundestag.de/bundestag/ausschuesse17/a08/anhoeerungen/Stabilisierungsmechanismus/021_Protokoll.pdf (accessed 26 May 2010).

¹⁴ See “War die Notwendigkeit weiterer Maßnahmen nicht bereits absehbar, als das Gesetz zur Ermächtigung der Not-hilfen für Griechenland in Bundestag und Bundesrat verabschiedet wurde?”, in Bundesministerium der Finanzen, “So soll die gemeinsame Währung stabilisiert werden: Mitgliedstaaten beschließen umfangreiches Maßnahmenpaket”, 18 May 2010, http://www.bundesfinanzministerium.de/nr_nn_53524/DE/Wirtschaft_und_Verwaltung/Finanz_und_Wirtschaftspolitik/20100518_FAQ-Massnahmenpaket.html#5 (accessed 26 May 2010).

- ▶ A special purpose vehicle backed by the euro-member states to raise €440 billion on the capital markets and grant loans to governments that run into payment problems (the “European Financial Stability Facility”, EFSF).
- ▶ Purchase by the European Central Bank of member states’ bonds to stabilise the bond notation and hence interest rates.

This package, even after the reform agreement on the EFSF of July 21st, 2011, still does not fulfil the four criteria listed above. Its lending capacity is still a problem. At the time of its negotiation, the argument was that its €440 bn was sufficient to cover possible borrowing needs of the two countries most at risk, Portugal and Spain. However, the relevant criteria here is that the mechanism should be able to potentially cover the borrowing needs of all countries that could potentially come under pressure in order to prevent contagion and a self-fulfilling financial crisis.

The ECB’s bond purchases

In addition to the rescue package, the ECB started the so-called “securities market programme” on 14 May 2010.¹⁵ Under this framework, the European System of Central Banks purchases government bonds in the secondary market. On 8 August 2011 the ECB resumed the programme and started buying Italian and Spanish bonds and by October had invested €118 bn, roughly €42 bn of which has been invested in Spanish and Italian bonds.

The idea behind this facility is to prevent excessive drops in bond prices (which are the equivalent to excessive increases in interest rates). The basic consideration here is that bond prices might overshoot, especially in thin markets, hereby further deteriorating confidence among investors. By preventing overly sharp moves, a country’s access to financial markets can be kept open and financial institutions spared write-downs on their portfolios.

While it is unclear how much these purchases have actually moved bond prices (and hence interest rates), the logic is in principle sound, at least when it comes to countries which are solvent, but have liquidity problems: If the bond purchases here lead to lower

¹⁵ “Decision of the European Central Bank of 14 May 2010 establishing a securities markets programme (ECB/2010/5)”, *Official Journal of the European Union*, 20 May 2010. http://www.ecb.int/ecb/legal/pdf/l_12420100520en00080009.pdf.

Table 1
A review of creating and amending the sovereign debt mechanism

11 Apr 2010	The Euro Group approves a €110 billion aid package for Greece to run until 2013, ^a honouring pledges made by the Council on 11 February and 25 March 2010. ^b EU and IMF assistance allows Greece to avoid large-scale borrowing on the private capital markets until 2013. Any credit Greece taps will be subject to conditions negotiated with the EU and IMF. The progress of reforms will be verified quarterly.
9 May 2010	The promise of assistance is expanded to cover all eurozone states, with a €750 billion safety net ^c lasting until 2013, and to provide emergency loans and credit guarantees from three possible sources. These loans, too, are tied to strict conditions set by the EU and IMF.
14 May 2010	The European Central Bank launches Securities Market Programme (SMP) to purchase government debt on the secondary market.
October 2010	In its final report, the Van Rompuy Task Force highlights the necessity of a permanent crisis resolution mechanism.
11 March 2010	The European Council decides to increase the effective volume of the EFSF in order to ensure that it can make use of its full lending capacity, as the initial total lending capacity of the package fell short of the €440 billion headline figure as rating agencies demanded further securities in order to guarantee the EFSF triple-A creditor status.
21 June 2011	Ecofin agrees on ESM Treaty.
21 July 2011	A special euro area summit held on 21 July 2011 decides to improve the effectiveness of the EFSF by allowing it to <ul style="list-style-type: none"> ▶ act on the basis of a precautionary programme; ▶ finance recapitalisation of financial institutions through loans to governments including non-programme countries, ▶ intervene in the secondary markets on the basis of an ECB analysis recognising 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. The implementation of the EFSF reforms requires an EFSF Treaty renegotiation and a Parliamentary ratification in the member states.
Summer 2011	Launch of new negotiations on revised ESM Treaty to include the newly introduced features of the EFSF.
Presumably early 2012	Ratification of the revised ESM Treaty in national Parliaments.

- a** *Statement on the Support to Greece by euro Area member states*, 11 April 2010, www.eu2010.es/export/sites/presidencia/comun/descargas/Economia_Hacienda/ue-grecia.PDF (accessed 2 June 2010).
- b** *Statement by the Heads of State or Government of the European Union*, 11 February 2010, www.eu2010.es/export/sites/presidencia/comun/descargas/declaraciones/en_consejogrecia.pdf (accessed 25 May 2010); *Statement by the Heads of State and Government of the euro Area*, 25 March 2010, www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/113563.pdf (accessed 25 May 2010).
- c** Due to the requirement of rating agencies, the actual loan volume available is much lower than €750 billion.

interest rates and allow a country to service the debt and avert a default, the bonds will gain in value. Just as an emergency lending facility, this measure can help stabilise expectations in a favourable equilibrium. Moreover, if the government whose bonds the central bank has bought does not default, the central bank will make a profit with the bond purchase. Here is thus the possibility for a win-win situation.

Again, however, it is problematic if bonds of an insolvent country are bought in this process: Here, basically part of the country's debt will be implicitly paid for by the other members of the euro area. If the country ultimately defaults, the central banks will have to write down the value of the bond and will cut their profit disbursement to national budgets accordingly.

The future European Stability Mechanism

On 11 July 2011, finance ministers of the 17 euro area countries signed the Treaty establishing the European Stability Mechanism (ESM). The Treaty follows the European Council decision of 25 March 2011 and builds on an amendment of Article 136 of the Treaty on the Functioning of the European Union (TFEU) which the European Council agreed upon on 16 December 2010. The amendment to Article 136 reads: "The member states whose currency is the euro may establish a stability mechanism to be activated if indispensable to safeguard the stability of the euro area as a whole. The granting of any required financial assistance under the mechanism will be made subject to strict conditionality."

The special euro area summit of 21 July 2011 enlarged the scope of instruments of the current mechanism EFSF, which will most probably require a revision of the ESM Treaty, itself now up for ratification in national Parliaments during winter 2011/2012.

The European Stability Mechanism (ESM) is a permanent rescue mechanism to succeed the temporary European Financial Stability Facility and European Financial Stabilisation Mechanism. The ESM is due to be launched in mid-2013. Legally, the ESM will be established by an intergovernmental treaty among the euro area states as an intergovernmental organisation under public international law. Like the EFSF it would be located in Luxembourg. It would be open to other members to join and would be led by a Board of Governors. Each state would appoint a governor and the board would either be chaired by the President of the Euro Group or by a separate elected chair from

amongst the governors themselves. Table 2 gives an overview of the revised EFSF and the ESM.

The ESM will provide financial assistance to euro area member states following mutual agreement and under strict conditions. Financial assistance will only be provided if it is considered necessary to ensure the financial stability of the euro area as a whole. Any euro area member state receiving assistance must implement a macro-economic adjustment programme and a rigorous analysis of public-debt sustainability, and foresee IMF participation in liaison with the ECB.

According to the ESM Treaty, the mechanism could exceptionally decide to purchase bonds issued by an ESM Member on the primary market if this maximises the cost efficiency of the financial assistance. In addition, the decision of the euro area summit of 21 July 2011 allows the EFSF and the ESM to purchase bonds on the secondary market under the condition of co-ordinating with the ECB.

The ESM's initial maximum lending volume is set at €500 bn. Its capital stock of €700 bn will ensure that lending can effectively be made up to this amount. It consists of €80bn in paid-in shares and €620 bn in callable shares. National contributions are established with a contribution key and would increase automatically if a new member country joins the euro area and the ESM.

The initial intergovernmental ESM Treaty states that collective action clauses (CACs) will be included as of July 2013 in all new euro area government securities with maturity above one year. ESM financial assistance based on assistance programmes that were already in place before the signature of the ESM Treaty are supposed to be exempt from this provision. The standardised form of CACs will ensure an equal legal basis for all countries in their negotiations with creditors, so that creditors can decide by qualified majority on case-by-case changes to the terms of payment.

However, the results of the special euro areas summit opened up a debate on whether private sector involvement will actually be maintained in a revised ESM Treaty. The Council conclusions state that "As far as our general approach to private sector involvement in the euro area is concerned, we would like to make it clear that Greece requires an exceptional and unique solution."¹⁶ Commission President Manuel

¹⁶ Statement by the Heads of State or Government of the Euro Area and the EU Institutions. July 21st, 2011, http://www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/123979.pdf.

Table 2
The revised EFSF and the old ESM¹⁷

	<i>Revised EFSF</i>	<i>Old ESM</i>	<i>Remarks</i>
Lending capacity	€440 billion	€500 billion	The lending volume is deemed insufficient. Ways to increase it would imply more national guarantees and capital, or, for instance, new ways of financing the EFSF, for instance through a credit line with the ECB.
Instruments	<ul style="list-style-type: none"> ▶ Rescue packages ▶ Primary market bond purchases ▶ Secondary market bond purchases ▶ Bank recapitalisation loans ▶ Precautionary credit 	<ul style="list-style-type: none"> ▶ Rescue packages ▶ Primary market bond purchases 	Presumably, the secondary bond market purchases and bank recapitalisation credits will also be introduced into the ESM Treaty.
Interest rate	For Portugal and Ireland between 200 and 250 basis points above financing costs; cut after Council decision of July 2011 down towards financing costs	Defined in Annex III of the ESM treaty: Initially, 200 basis points above financing costs; additional surcharge of 100 basis points after 3 years.	In order to make the ESM work well and prevent self-fulfilling crises, the new ESM treaty should include the provision of the EFSF loans to Portugal and Ireland after the July 2011 Council meeting
Conditionality	Conditionality is attached to loans in rescue packages, but not in the case of precautionary credit, credit for bank recapitalisation or secondary market purchases.	The initial ESM Treaty only foresees conditionality as part of rescue packages.	For “donor countries” the absence of conditionality in the three new instruments of the EFSF is sensitive.
Private sector involvement (PSI)	Not mentioned.		PSI should be maintained, but should be embedded into a sovereign default mechanism and only be applicable in solvency crises.
Involvement of national Parliaments	In Germany, the Bundestag has to agree to new rescue packages, however when the new instruments are applied the consent of a small committee is sufficient.		

¹⁷ “Old ESM” refers to the ESM Treaty as agreed upon by the Ecofin on 21 June 2011.

Barroso who was likewise present at the meeting stated the following: “We now are clear about what we mean by PSI and to whom it applies. It is a voluntary approach by the private sector and it therefore is a solution with the markets, not against them. Importantly, we are crystal clear that PSI is for Greece, and Greece alone. It is an exceptional solution which we exclude for others. It is a unique solution.”¹⁸

As of 1 July 2013, the ESM will enjoy preferred creditor status similar but junior to the IMF. Euro area member states will support equivalent creditor status of the ESM and that of other EU member states lending bilaterally alongside the ESM.

Evaluation of the ESM

When assessing to what extent the planned set-up with the new ESM from 2013 onwards is a sensible approach to the euro crisis, one first needs to state what the requirements of a durable solution would be. The following four points seem central:

- ▶ **Prevent self-fulfilling financial crises** by avoiding a situation where countries are driven into payment difficulties simply through changes in market expectations even though under normal borrowing conditions they would be able to cope with their level of debt.
- ▶ **Bridge liquidity bottlenecks** to ensure that countries that are structurally solvent retain access to capital for funding state expenditure and rolling over debt.
- ▶ Provide the necessary means for **bank recapitalisation**, in particular in the case of a sovereign default.
- ▶ **Prevent moral hazard** by making the conditions for assistance unattractive enough that governments still have an incentive to consolidate their budgets or by offering carrots that would incentivise governments to engage in consolidation and structural reforms.
- ▶ **Restructure the debt of insolvent states quickly and constructively** so that they can return to a sustainable path of growth as soon as possible.

¹⁸ Statement by José Manuel Durão Barroso, President of the European Commission, following the meeting of the Heads of State or Government of the euro area Press conference Brussels, 21 July 2011 <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/11/534&format=HTML&aged=0&language=EN&guiLanguage=en>.

After the revisions of the past year and a half, the rescue institutions have moved a long way towards fulfilling these goals. In principle, the ESM as a fund to provide liquidity support at reasonably low interest rates could be a good starting point to prevent self-fulfilling financial crisis. By giving the option to involve creditors, a restructuring of public debt is possible. The conditionality of the austerity programmes so far have been of a nature that makes it highly unattractive to seek liquidity support without real need, so moral hazard should be contained.

However, there are some issues left open. First, the ESM's volume seems to be too small to actually make the occurrence of a self-fulfilling financial crisis really impossible. The volume of the ESM might still be sufficient to support Spain, but would in all likelihood be insufficient to support Italy. The problem is even more difficult as it might not be possible to expand the ESM in its current design to a volume also covering Italy without endangering the credit rating of France (see below).

A second problem might be that in some countries (among others, Germany), national parliaments will have a veto power over new ESM programmes. While this might not be a problem as long as pro-European governments with strong majorities are in power, in a situation of euro-sceptical coalitions, this might be an invitation to financial markets to test the countries' willingness to actually open up new credit programmes to countries not yet supported. This might actually lead to a self-fulfilling crisis as described above.

Moreover, so far it is not clear whether the ESM will really be able to restructure the debts of insolvent countries quickly and constructively. First, it is disputed whether debt restructuring in the form of private sector involvement is a tool also available for future cases (see above). Second, at least in the case of Greece, there is little sign that PSI has really helped the country to reduce the debt to a level which would allow a quick return to economic growth (see country analysis below).

Finally, it is not clear whether the EFSF's current approach to indirectly recapitalise banks by giving loans to national governments for new bank capital (which can also be expected to be included in the revised ESM Treaty) is sufficient to recapitalise banks especially if the debt level of the country concerned is already high and the recapitalisation loan might endanger its credit rating.

Closing the Gaps: From the ESM to a Five-component Mechanism for Avoiding Self-Fulfilling Financial Crises

An effective mechanism against self-fulfilling financial crises could consist of five components: a European liquidity fund which could be constructed out of the ESM, a bank recapitalisation fund, a formalised insolvency procedure for governments, jointly guaranteed “euro-bonds” for a senior tranche of public national debt and closer economic and budgetary policy coordination. These measures could deal with both liquidity and solvency problems of individual states, reduce moral hazard and prevent self-fulfilling financial crises.

Constructing an effective liquidity fund

The core of the crisis management mechanism would be a European liquidity fund constructed out of the ESM, which provides speedy relief for eurozone countries with liquidity problems and bridges periods of liquidity shortage.

In order to prevent self-fulfilling financial crises the interest charged on loans from this facility should not be the market rate but instead only slightly above the interest rates paid by other euro states without borrowing difficulties. Since the correction of the EFSF interest rate on the loans to Greece, Ireland and Portugal in July 2011 the set-up is now reasonable and lower interest rates should also be negotiated into the revised ESM treaty.

Credit should be granted under clear and transparent rules. The current approach in the ESM of tying payments to a restructuring programme supervised by the IMF fulfils this criterion. Presenting a realistic plan for restoring the sustainability of public finances – which by definition can only apply to states that are basically solvent – must be a precondition.

The existence of such a fund will probably stabilise market expectations to such an extent as to prevent speculative attacks on states that are solvent in the medium to long term but insolvent in the short term.

In order for the fund to unfold its stabilising effect the maximum necessary volume must actually be available. Credit facilities amounting to 10 percent of the eurozone GDP (or currently about €920 billion) would be a sensible order of magnitude. This would

be large enough to cover all current problem cases at least in combination with euro-bonds as described below, but would probably still be small enough not to endanger the solvency of the credit-guaranteeing countries. Under such a rule the volume would grow automatically with the economic output of the euro area, ensuring that the guarantees remain adequate in future.

It is sensible to have given loans from the ESM senior creditor status compared to traditional bond finance instead of just giving it equal treatment with other creditors. Together with a new insolvency mechanism for governments (see below) this encourages private creditors to seek speedy debt restructuring once insolvency becomes foreseeable because the granting of emergency loans with priority would devalue private claims.

It must be ensured that emergency loans from the fund only go to governments that are illiquid but not structurally insolvent. They should be granted only if the affected state can present a plausible programme showing how it intends to reduce its debt to a manageable level within a defined period. Here again, the ESM framework is well constructed and a huge step forward from the solutions first sought with the initial rescue packages.

In order to address moral hazard, countries must be prevented from making use of the facility without real need. A country wishing to call on the funds must be prepared to largely relinquish its control over national budget policy. For a period this influence on national politics would be greater than under programmes run by the IMF alone, because the fund would have to have the means to very quickly verify and approve the budget and its implementation together with the European Commission, the Euro Group and possibly the IMF.¹⁹ The ESM foresees cooperation with the IMF, while the IMF according to its statutes is principally ready to provide loans to its member states. Hence,

¹⁹ The European Central Bank proposes sending an “enforcement officer” to oversee compliance. See European Central Bank, *Reinforcing Economic Governance in the Euro Area*, 10 June 2010, <http://www.ecb.europa.eu/pub/pdf/other/reinforcingeconomicgovernanceintheeuroareaen.pdf> (accessed 12 July 2010).

it is likely, and useful, that future rescue packages are developed in cooperation between the IMF and the ESM.

This intervention in national budgetary sovereignty could produce political tensions and reduce the EU's standing in the affected country at least for a time. It must therefore be made absolutely clear that governments ask the fund for soft loans voluntarily and are not coerced into doing so by the EU. Intervention in the budget would be the last resort at the end of a coordinating process lasting many years within the eurozone and the EU – a process that is supposed to prevent the worst case ever occurring. So by this stage the member state concerned would have had plenty of time to try out its own ideas for ensuring sustainable state finances and a competitive economy.

As economic policy coordination is strengthened in the euro area it will be important to make sure it is properly integrated with the consolidation and reform programme of the highly indebted member state. This must be accomplished in a cooperative manner because the economic policies of the other member states have a decisive influence on the chances of the highly indebted state to reduce its debt (see above). The fund could provide help alone or together with the IMF. At least in the first years of its existence the second method would be advisable.²⁰

Providing instruments for bank recapitalisation

As part of the sovereign debt crisis management mechanism, there should also be instruments to recapitalize banks. One impediment for private sector involvement in debt restructuring has so far been the fear that a large hair-cut on outstanding debt might endanger the banking system. If the fund had the power to quickly recapitalise banks, this fear could be alleviated. The recapitalisation in these cases should take place in such a manner so that the private shareholders of ailing banks have to bear the write-down first and then the fund would acquire new shares of

banks by injecting capital, which could later be sold back again to the private sector.²¹

One option would be to provide the liquidity fund with the ability to directly recapitalise ailing banks in the member countries. The direct injection of capital into banks seems preferable to the current set-up under which the EFSF, and later the ESM, is allowed to lend funds for bank recapitalisation to individual countries as it would not further increase the debt-to-GDP ratio of countries in crisis, but would use European funds for recapitalisation.

An alternative would be to set up a separate bank recapitalisation fund. The advantage here would be that in the medium-term sources other than national capital contributions and guarantees could be employed, for instance a financial transaction tax or a bank levy.

Insolvency arrangements for European countries

An orderly procedure for debt restructuring²² is needed when a country's unsound budget policies or unfavourable external economic circumstances leave it unable to service its debt. In this case a solution must be found that balances the interests of creditors with reducing the country's debt burden to a point where it can return to a normal path of growth.

Opponents of sovereign default argue that the political and social costs to the affected government would be unbearable and that the bankruptcy of one euro area member would discredit the EU as a whole

²⁰ For the pros and cons of IMF participation see Jean Pisani-Ferry and André Sapir, "Crisis Resolution in the Euro Area: An Alternative to the European Monetary Fund", *Inter-economics* 45, no. 2 (March/April 2010): 72–75; Jürgen Matthes, "The IMF Is Better Suited than an EMF to Deal with Potential Sovereign Defaults in the Eurozone", *Inter-economics*, 45, no. 2 (March/April 2010): 75–81.

²¹ Such an approach will make the activities of the fund relatively cheap. As witnessed through recapitalisation efforts of several governments during the economic and financial crisis of 2008/9, a well structured capital injection by the public sector can even produce profits, as has been the case in Switzerland and in the USA.

²² Such a mechanism has long been debated. See Anne Krueger, "International Financial Architecture for 2002: A New Approach to Sovereign Debt Restructuring", speech at the National Economists' Club Annual Members' Dinner, American Enterprise Institute, Washington, D.C., 26 November 2001, www.imf.org/external/np/speeches/2001/112601.htm (accessed 27 May 2010); for an overview see Nouriel Roubini and Brad Setser, *Bailouts or Bail-ins? Responding to Financial Crises in Emerging Economies* (Washington, D.C.: Institute for International Economics, 2004). Daniel Gros and Thomas Mayer in effect propose such a procedure in *How to Deal with Sovereign Default in Europe: Create the European Monetary Fund Now!* CEPS Policy Brief 202, Brussels, 17 May 2010, <http://www.ceps.eu/ceps/download/2912> (accessed 22 May 2010).

and undo the convergence achieved thus far in the euro area. A sovereign default would indeed come with considerable political costs and it would be better to avoid a default in the first place. That said, bridging facilities such as emergency loans or extending the repayment period of loans are useless where a country is truly insolvent (see the distinction between liquidity and solvency crises, above). The long-term social and political costs of struggling under a suffocating burden of debt would be considerably greater than those of an orderly insolvency. Virtually unable to achieve economic growth, the country's convergence within the euro area would be abruptly reversed. Moreover, the orderly insolvency of a single country would probably do less harm to the reputation of the EU than having member states under permanent de facto external administration and forced to send significant parts of their national income and state revenues abroad.

It is also suggested that the orderly default of one state would harm the reputation of the other euro states hereby triggering new increases in the interest rates of other euro countries. This effect can be neutralised by providing liquidity assistance for solvent governments and adopting clear rules for initiating an insolvency process. In fact, one should be very careful not to introduce a sovereign debt restructuring mechanism without having the facilities in place to prevent liquidity crisis in other countries.

In order to minimise the costs and risks of a sovereign default, the criteria for debt restructuring should be defined in the clearest possible terms. An orderly restructuring is preferable to an unordered default because the latter is usually a drawn-out process where the outcome – for creditors and for the affected country itself – remains uncertain for a long time.²³ In an unordered default creditors are often treated unequally, with those with the most powerful lobby generally obtaining better restructuring conditions. A threat of an unordered sovereign default within the euro area will probably worry the financial markets more than any orderly insolvency procedure. The reaction would probably be especially strong because the markets – well aware that an affected country cannot improve its competitiveness by devaluing its currency – would be sceptical about the long-term

growth prospects. A loss of confidence in one euro area member could have repercussions for the assessment of other problem states and lead to a self-fulfilling financial crisis (see above). A predictable insolvency process, on the other hand, could help to stabilise market expectations. Crises of confidence can also be defused by coordinating economic policy to encourage convergence and introducing joint euro-zone bonds (see below).

The ideal option would be a global insolvency procedure for national governments, because in the event of a state bankruptcy creditors would be able to base their risk assessments on international experiences. Proposals have been under discussion for years. The sovereign debt restructuring mechanism put forward in 2001 by Anne Krueger (then Deputy Managing Director of the IMF) would give debtors and creditors their own incentives to seek a compromise if a country was no longer able to sustain its debt, and ensure that debt restructuring would not drag on for years causing great insecurity for all concerned. Ultimately, Ms. Krueger argues, such a procedure would be better than seeking to negotiate a solution between the over-indebted state and its creditors, given that with modern public debt in the hands of numerous different lenders, from small investors to powerful pension funds, a negotiation solution would be very cumbersome to achieve.²⁴ Such initiatives have, however, so far failed to come to fruition for lack of international coordination and, in particular, resistance from the United States.²⁵

For that reason it would be obvious to advance the process first within the EU framework, while continuing to pursue dialogue in the G20, with the IMF and especially with the United States. This would improve the chances of establishing an international insolvency mechanism in the medium term. American insolvency law already has a specific insolvency procedure for territorial entities ("Chapter 9"). A similar approach could be introduced in the EU as part of financial market regulation.

A European solution of this kind could cover most claims against eurozone states, which issue and trade their bonds primarily in European financial centres. In principle it must be possible to institutionalise an

²³ The orderly insolvency must not be misunderstood as an automatic process with guaranteed success. Even with a transparent insolvency procedure there will be phases of insecurity and political tension because implementation still depends on political negotiating processes.

²⁴ Krueger, "International Financial Architecture for 2002" (see note 22).

²⁵ For example Roubini and Setser, *Bailouts or Bail-ins?* (see note 22), chapter 8.

insolvency procedure via regulation of these financial markets.

A special body could be set up to open and manage an insolvency procedure at the request of a certain proportion of the creditors or the government of the affected country. The national debt and outstanding claims would be reduced to a point where the country's debt became viable again. Claims on any euro-bonds that may have been issued (see below) and on the EU liquidity facility would have priority and would be excluded from restructuring.

In order for an insolvency procedure to remain practical the eurozone states would have to agree to cease issuing state debt in other jurisdictions, including the United States, before introducing the other mechanisms. That agreement would also prevent bond emission activity shifting to financial centres outside the EU after the introduction of EU insolvency rules for member states.

But another solution is also conceivable, namely to exchange national state debt for euro-bonds and new national bonds (see next section for details). Here investors would be required to accept a collective action clause recognising such an insolvency procedure. The incentive from the creditors' point of view is that euro-bonds would be more secure because all the euro states back them collectively. In return they would have to accept the insolvency procedure for the new national bonds. Collective guarantees would tend to make their investment safer in part (for the blue bonds), and no less secure as a whole (for a portfolio of blue and red bonds). If this path were to be taken the eurozone states would have to agree to include such clauses in the contracts for future bond issues.

In the public debate, it has sometimes been argued that a sovereign debt restructuring mechanism is not really necessary to bring down debt levels to a sustainable level. As an alternative, it was proposed that money either from the EFSF or the EFSM, or later from the ESM, could be used to buy government debt with a discount in secondary markets; these ideas have found their way into the conclusions of the summit on 21 July 2011. With Greek government being traded at 70 percent of its face value, it was argued that by buying this debt in the secondary market, one could reduce the Greek debt level significantly. However, this argument both defies economic logic as well as historical experience. The current price for Greek debt is only as low as it is because investors have significant doubts on Greece's long-term solvency and hence whether they will be repaid. Any bond purchase pro-

gramme which would reduce the Greek debt level would at once mitigate these doubts and bring up the notations of Greek bonds in the secondary market. Hence, it is unrealistic to be able to buy a significant amount of outstanding debt at current low market prices. This logic is well known: Several studies examining bond repurchasing programmes in Latin America in the 1990s show that countries using borrowed money to repurchase bonds usually did not reduce the debt burden. Moreover, the academic papers also provide formal economic models demonstrating why the outcome is all but inevitable.²⁶ As these papers show, debt repurchases usually only benefit the creditors while being a poor deal for debtors.

However, there might be some role for bond purchases. Financial markets sometimes fall victim of herd behaviour and overshooting. In such cases in which notations for bonds of a specific country drop quickly without any news substantiating the drop, it might be helpful to intervene in the secondary market to stop the trend. Therefore, it is sensible that the EFSF has in principle been given the power to buy bonds in the secondary market, yet, and especially once a country draws credit already from the EFSF, bond purchases should be rather limited.

In terms of dealing with insolvent countries, the ESM framework falls short of the requirements laid out above. There is no clearly defined path for debt restructuring, and it is not even undisputed between Germany and France if private sector involvement along the lines decided for Greece is an option for future cases. The agreement stipulates that all bonds issued in the euro area from 2013 onwards should include collective action clauses (CACs) which allow bonds to be restructured if a country has solvency problems. As any country deemed to be insolvent now (as possibly Greece is) will not be able to issue any new bonds in the private capital market, CACs for future emissions do not help. Moreover, even for countries issuing new bonds after 2012, it will take a long time until all government debt is covered by CACs. Finally, CACs are only a second best solution to a coherent insolvency procedure as they usually only apply to bond finance. Bank loans would have been renegotiated

²⁶ See for example Jeremy I. Bulow and Kenneth Rogoff, *The Buyback Dondoggle*, *Brooking Papers on Economic Activity*, Vol. 2, 1988, pp. 675–698, or Jeremy I. Bulow and Kenneth Rogoff, "Cleaning Up Third World Debt without Getting to the Cleaners", *Journal of Economic Perspectives* 4, no. 1 (Winter 1990): 31–42.

separately. An insolvency mechanism including all creditors is much more likely to come to a fair and equitable distribution of write-downs.

Euro-bonds for senior government debt

The third component of a sustainable defence against financial crises would be to introduce joint eurozone bonds. This proposal was made in 2009 by Euro Group President Jean-Claude Juncker, and discussed several times within the Group.²⁷ Meanwhile, several political parties, for instance the ALDE (European Liberals), the German Social Democrats and the Greens, have strongly argued for the introduction of euro-bonds. On the academic side the concept has been developed most comprehensively by Jacques Delpla and Jakob von Weizsäcker.²⁸

The idea is to create a European debt title with which member states would be able to fund part of their state debt. The figures under discussion range from 40 percent of each country's national GDP (preferred by Juncker) to 60 percent (proposed by Delpla and von Weizsäcker). This debt title would be a joint liability of countries taking part in the scheme and it would be senior to other (national) bonds. If one country were not able to pay up, the other countries would have to pitch in.

This bond should be inherently secure and liquid. The depth of the market for Blue Bonds would be comparable to that for U.S. Treasury Bills and would guarantee member states similarly low rates of interest. The greater market liquidity and security of these bonds – with all euro area states assuming joint and several liability – means that interest rates could settle below the euro area mean and possibly even below the rate on German Bunds.²⁹

²⁷ Jan Strupczewski, "Euro Zone Bond Idea Taking Shape, May Never Fly", *Reuters*, 20 February 2009.

²⁸ Jacques Delpla and Jakob von Weizsäcker, *The Blue Bond Proposal*, Bruegel Policy Brief (Brussels, May 2010), http://www.bruegel.org/uploads/tx_btbbreugel/1005-PB-Blue_Bonds.pdf (accessed 2 June 2010); see also Paul De Grauwe and Wim Moesen, "Gains for All: A Proposal for a Common Eurobond", *Intereconomics* 45, no. 3 (May/June 2009): 132–35, and the critique by Wim Kösters, "Common Eurobonds: No Appropriate Instrument", *Intereconomics* 45, no. 3 (May/June 2009): 135–38.

²⁹ Delpla and Weizsäcker, *The Blue Bond Proposal* (see note 28), 7. There are other works which claim that euro-bonds would have a higher interest rate than German Bunds such as Kai Carstensen, *Eurobonds: Ausweg aus der Schuldenkrise?*, presentation at the Ifo press conference "Eurobonds – What they will

For debt above the cut-off of 60 percent of GDP the euro area states would have to issue national bonds for which they alone would be liable. These Red Bonds would only be serviced once any Blue Bond obligations had been fulfilled. They would thus be more risky and consequently raising credit with them would be more expensive than with Blue Bonds (probably on an increasing scale according to the level of debt). This would give member states a clear incentive to avoid borrowing above the 60 percent limit.

The introduction of Blue and Red Bonds would not only lower the cost of debt service for debt below the 60 percent cut-off, but would also create a sensible instrument for encouraging budget discipline. Countries with a large amount of debt would reduce their borrowing costs while at the same time submitting to greater discipline because the Red Bonds would be associated with risk surcharges. This element distinguishes the idea from proposals calling for the eurozone countries to issue their entire public debt in the form of joint bonds. In the medium term Blue Bonds would particularly reduce the burden on those states that would be expected to fund a bailout of other states.

The division of public debt into Blue and Red Bonds could also help to avoid self-fulfilling financial crises. Growing mistrust in the financial markets against one country would only increase returns on Red Bonds, thereby making it less likely for a government to be driven into insolvency.

Institutional management of Blue Bonds

In order to lend credibility to the assurance that joint bonds will not be misused to run irresponsible budget policies at low interest rates, no debt exceeding 60 percent of GDP should be funded.

Under Delpla and von Weizsäcker's proposal, an independent stability council would make the participating countries a non-negotiable proposal for distributing the Blue Bonds for the coming year, which the national parliaments would then ratify. Ratification would be required because member

cost the taxpayer – After the meeting between Merkel and Sarkozy" on 17 August 2011 in Berlin. However, this research neglects the positive effects of a larger and more liquid market as well as that Germany might in future be in a position where its risk assessment could also improve, thanks to other countries have assumed joint liability for a part of Germany's outstanding debt.

states would share joint liability. Countries that pursued irresponsible budget policies could be driven out of the system by assigning them fewer Blue Bonds. Under this approach it would also be conceivable for countries with sound budgets to leave the system. If a country did not call on its contingent of Blue Bonds for several years it would also cease to be liable for new debt issued by other member states.

This set-up seems overly complicated. It would be better to allow the issue of Blue Bonds up to the 60-percent Maastricht limit without any further political decision-making processes and without any monitoring over and above the coordination of budgetary and economic policy that takes place anyway. Any discretionary procedure for setting the level of Blue Bonds permitted below the 60 percent limit would run the risk of politicising the process and provoking tensions and conflict within the eurozone. It is also doubtful whether a stability council would be truly independent, or might not actually be influenced by individual member states. Moreover, the option for countries to drop out of the scheme would mean that a situation is conceivable in which only bad risks remain liable for the Blue Bonds. This is counter-productive and therefore all euro countries should become members of the scheme.

The question is how to move towards the Blue and Red Bonds. Simply allowing new debt to be issued in Blue Bonds (and hence old debt implicitly becoming Red Bonds) would mean a huge write-off on currently outstanding government debt and would consequently cause problems for the banking sector. Instead, it seems more sensible to organise an exchange of outstanding debts for Blue and Red Bonds. Each investor would receive Blue and Red Bonds in proportion to the member state's current level of debt, in such a way that the sum of outstanding Blue Bonds after the exchange would make up exactly 60 percent of GDP of the respective country. Such an exchange process would be neutral for the creditor or could even be positive, since the proportion of higher-risk securities they would receive would be balanced by the share of more secure bonds. Given that the collective backing of the euro states would make Blue Bonds particularly secure, the risk-return profile could actually be improved by the exchange, increasing the likelihood of it being accepted by all investors (particularly where the old national bonds would be subordinated in the event of an insolvency). If an investor refused the exchange, all his bonds would be the equivalent of Red Bonds.

Significance for debt crises

Fundamentally, a liquidity fund and an insolvency procedure described above would together be capable of mastering liquidity and solvency problems even without joint bonds, but the introduction of Blue Bonds would make it less likely that a country would have to call on the fund at all. Therefore, these common bonds would reduce the amount necessary for possible loans in the liquidity fund. This is important in a situation such as the current one in which a significant expansion of the ESM might threaten the credit rating of contributing countries such as France.

The difficulty with the present situation is that if the risk premium on a country's debt rises, all its old debts have to be rolled over at the new higher rate of interest. With Blue and Red Bonds this would apply only to the latter, reducing the danger of a country being driven into bankruptcy in a self-fulfilling financial crisis. In fact, this measure could completely prevent such crises because investors would have no fear that exorbitant risk premiums might send a country spiralling into bankruptcy.

An alternative way ahead: A "core euro bond"

Unfortunately, so far, the ESM does not make any provisions for euro-bonds. Moreover, the political climate, and especially in Germany after the constitutional court decision on the EFSF, might make it unrealistic to move towards full-fledged euro-bonds as described above. The question is thus how to proceed from here on. If in the near future interest rates on Italian bonds increase again to a level which would make servicing public debt difficult and a possible for need assistance from the ESM, the volume of the fund might need to be increased again. In such a case, it is of fundamental importance to shelter other countries and France in particular, from a downgrading of its credit rating so that it would not also be drawn into the spiral of a self-fulfilling financial crisis, because only Germany would then be left to guarantee for the ESM among the large countries.

One option for France and Germany short of euro-bonds could be to temporarily assume joint liability of public debt. The parliaments of these two countries could agree that they would jointly guarantee each other's liabilities for a period of 5 to 10 years. With the long history of the special French-German partnership, such a move might be politically easier to be

decided upon; especially as no countries with clearly problematic government finances are involved.

From the credit ratings impact perspective, such a move would be much more sensible than, for example, lending funds from the ESM to France which were financed by Germany injecting more funds into the mechanism: In effect, if one regards total public debt of the countries involved, rating agencies count ESM loans twice: They first increase the debt-ratio of the country guaranteeing the ESM issue and they also increase the debt-ratio of the country borrowing from the ESM. Assuming joint liability does nothing of this sort so France and Germany would most likely be able to sustain their triple-A ratings and serve as a stability anchor for the euro area for a longer period of time.

Macro-economic surveillance and coordination

So far, this paper has mainly focused on the prevention of a self-fulfilling fiscal crisis in which rising financing costs lead to insolvency of an otherwise solvent country, and how to deal with countries in which the public sector is insolvent.

However, there is a deeper issue which also needs to be tackled: The question of how to prevent countries getting into a precarious fiscal position in the first place. This part of the debate is closely linked to the establishment of a permanent crisis resolution mechanism as it has been made a *sine qua non* condition from the German side for agreeing to alter the EU treaty for the establishment of the ESM.

The related debate has primarily focused on budget rules, in particular with the recent reform of the Stability and Growth Pact and demands to introduce “debt brakes” which would limit public borrowing into the constitution of all EMU member states. Additionally, new rules and procedures for economic policy coordination have been introduced and as part of the “legislative six pack” a macro-surveillance procedure is being set up. The so-called “Pact for the Euro Plus” and more regular meetings at the level of Heads of State and Government of the euro area would also provide room for more coordination.

The inclusion of the macroeconomic element in the surveillance is very important. While tighter budget rules might have prevented the Greek crisis (if they had prevented excessive deficits over the past decade) they clearly would not have helped in the case of Ireland and Spain. These countries had budget surpluses

until shortly before the crisis. The Irish and Spanish fiscal problems originated in an unsustainable boom in the construction and real estate sector which first contributed to eroding competitiveness and later led to a deep recession and expensive problems in the banking sector. Any legal provision to limit budget deficits in the crisis would at best not have helped, at worst prevented necessary measures to stabilise the economies and their banking systems.

However, the current proposals to limit macroeconomic imbalances tackle the underlying problems to varying degrees and none is perfect. The “Pact for the Euro Plus”³⁰ is the weakest of the proposals. The measures proposed would not have been able to prevent the current crisis and it is therefore questionable if they would be able to prevent future crises. While it is true that wage indexation has contributed in some cases to the problem of countries losing competitiveness, they clearly were not the decisive factor in the overheating economies of Spain or Ireland. Mutual recognition of educational degrees might improve labour mobility somewhat and thus might help bring down unemployment through outward migration in Spain, Greece or Ireland, but may at the same time lead to a “brain drain” and damage these countries’ long-run growth prospects. The creation of common rules for the corporate tax base as well as an increase of the retirement age across the European Monetary Union would not have helped to prevent a crisis as we are seeing now, nor is it clear how the former would increase competitiveness or fiscal sustainability. Finally, the Pact fails to acknowledge that competitiveness is a *relative* concept and that the problems of inter-European divergence of price competitiveness cannot be tackled with implementing the same measures for countries with external deficits as well as for countries with external surpluses. Any solution of the inter-European divergence in price competitiveness and aggregate demand by definition needs a relative improvement of the weak countries’ price competitiveness coupled with a relative deterioration of the strong countries’ competitiveness, or alternatively a decrease of the aggregate demand of deficit countries and an increase of the aggregate demand in surplus countries.

The European Commission’s legislative proposal of the scoreboard approach fares much better. It proposes to monitor macroeconomic imbalances according to a number of indicators, including

³⁰ European Council Conclusion, 24/25 March 2011.

current account balance, real exchange rate development, credit growth, construction growth and house prices. If countries are diagnosed with macroeconomic imbalances according to this scoreboard and prove uncooperative in tackling the problems, the EU can levy fines much in line with those for violation of the fiscal provisions in the Stability and Growth Pact. While some of the specific indicators chosen might not be ideal,³¹ the basic approach is sound: Using the indicators should provide early warning signals of important macroeconomic imbalances. Particularly important is that the Commission's proposal treats indicators of national competitiveness such as the real exchange rate as well as current account imbalances in a symmetric way.³² Both excessive real depreciations as well as excessive real appreciations would be covered; both excessive current account surpluses and deficits could fall under the framework.

However, drawbacks can be found in the Commission's proposal too: At least in the communication, the Commission has been highly ambiguous about whether surplus countries might also be punished under the framework. While internal Commission documents clearly show that Germany would have had warning signals for its high price competitiveness and huge current account surpluses prior to the crisis,³³ Commission officials on their missions to Germany have repeatedly stressed that there will be no mechanical application of the scoreboard, implying that Germany would be able to continue its policy stance as before. The danger here is that the application of the scoreboard approach would lead to new heated arguments between the EU Commission and member states and that crucial macroeconomic imbalances such as the huge current account surpluses and deficits would be ignored in the end as

the process of macroeconomic surveillance allows for a lot of political discretion before recommendations are given or sanctions imposed. It is well conceivable that the scoreboard approach would thus suffer a similar fate as the original Stability and Growth Pact under which Germany and France jointly prevented the application of sanctions in 2002. Here, a simple look at current account balances might have been a more straightforward and more effective approach.³⁴

³¹ For example, the real exchange rate chosen is that relative to the most important trading partners including the US, Japan and China, which could lead to a situation that a movement of the euro vis-à-vis the other currencies which should be treated as a common euro-zone problem leads to a warning signal on the scoreboard of individual countries.

³² This statement remains valid for the compromise found with the European parliament. While of course, surplus and deficit countries will need different policy recommendations to counter the imbalance, the new legislation continues to see both deficits and surpluses as a potential problem.

³³ European Commission, *A Structured Framework to Prevent and Correct Macroeconomic Imbalances: Operationalising the Alert Mechanism*, Note for the Economic Policy Committee and the Alternates of the Economic and Financial Committee, Brussels, 11 November 2010, ECFIN/B1/ARES sn (2010) 889561.

³⁴ See for such a proposal Sebastian Dullien and Daniela Schwarzer, *The Euro Zone Needs an External Stability Pact*, SWP Comments 9/2009 (Berlin: Stiftung Wissenschaft und Politik, July 2009).

Economic Perspectives of the 'Problem' Countries

Since the sovereign debt crisis started in the beginning of 2010, there have been concerns in financial markets over the fiscal position of a large number of EMU member states. Early on, Greece and Ireland had to seek liquidity help from their EU partners and the IMF. Portugal followed. Spain is also seen as a candidate for having to be taken off financial markets and being financed by the IMF and the European partners, at least for a while. In the summer of 2011, there were also concerns about the debt and deficit levels in Italy and France. Spreads on Italian bonds actually rose above those for Spain and spreads on French bonds reached the highest level since the beginning of EMU. The ECB started buying Italian and Spanish bonds on 8 August 2011 in order to stabilise yields at around 6 percent.

If it holds true that there can be a liquidity crisis without serious medium- and long-term solvency problems but which requires specific assistance, it is useful to categorise the countries discussed in the context of the crisis according to the nature of their fiscal problems in order to assess the necessities and options for policy-making in the months and years to come. In the following, Greece, Ireland, Portugal, Spain, Italy and France are assessed with regard to the question whether they risk facing solvency and/or liquidity crises.

Since economic growth is central to debt dynamics (see below), it is necessary to make some assumptions about the nominal GDP growth rates over the future. In order to realistically evaluate the countries' chances of getting out of the debt crisis and examine to what extent this problem can be solved by these countries alone, not only the fiscal positions need to be considered. The external imbalances are key in determining how and whether a country can actually regain competitiveness which is a condition for a return towards a sustainable growth path. The case studies below show that the problem of imbalances is more serious than commonly assumed and may require more cooperation in the field of economic policy in order to solve the problems underlying the sovereign debt crises.

Debt reduction in the 'problem' countries and economic policy in the rest of Europe

Whether member states of the euro area are illiquid or insolvent, or threaten to become so, depends both on their national budget consolidation and reform efforts and on the economic growth, demand and inflation trends in the euro area as a whole. Here the economic policies of the other member states play an essential role. This context is a factor in deciding whether a permanent mechanism for dealing with debt crises would be useful.

Alongside new borrowing, a country's nominal economic growth is decisive for the sustainability of its debt.³⁵ With annual growth of 5 percent even a highly indebted country such as Greece could run a budget deficit of 3 percent of GDP every year and the level of its debt would still fall gradually to 60 percent of GDP (see "The Arithmetic of Debt" below, p. 28). But with nominal growth of only 1 percent and a sustained deficit of 3 percent of GDP the debt level would rise to 300 percent of GDP.

Because growth and debt dynamics are interlinked, there are two direct mechanisms by which the success of national consolidation efforts will depend on economic policies in the rest of the eurozone. Firstly, greater demand growth from the partner countries would boost the exports of the crisis countries and thus lead to stronger real growth rates. Secondly, stronger wage growth in the partner countries would allow the crisis countries to regain some of their competitiveness without resorting to nominal wage cuts (and thus avoid major domestic deflation). Because falling prices lead to lower nominal growth (even if there is still growth in real terms) they increase the debt burden of a country and make it more difficult to repair public finances.

In order to trace the influence of economic policy in the rest of the eurozone on debt consolidation in the highly indebted countries we simulated the debt dynamic in Greece, Ireland, Portugal, Spain, Greece, Italy and France under a range of different assump-

³⁵ For an instructive overview of the mathematics of debt see Ley, *Fiscal (and External) Sustainability* (see note 10).

The Arithmetic of Debt

The most important indicator of a country's debt burden is debt in relation to GDP. Contrary to popular belief, the development of the debt/GDP ratio is determined not exclusively by current new borrowing but also by the growth of the economy. If the economy grows strongly the burden of old debt becomes less heavy. This effect is amplified by the devaluation of old debt through inflation. Therefore, alongside new borrowing, the *nominal* rate of economic growth is central to the sustainability of budget deficits.

Calculating the level of debt a country is heading for with a given deficit and a given rate of growth requires differential equations (Ley, *Fiscal (and External) Sustainability*, see note 10). Although the calculations themselves may be relatively difficult for a non-economist to follow, the result is easy to interpret. With an annual budget deficit "b" and nominal growth rate "g", the level of debt converges on the value "d*":

$$d^* = \frac{b}{g}$$

With a budget deficit of 3 percent of GDP – as stipulated by the Maastricht Treaty – and nominal economic growth of 5 percent the debt thus converges on precisely 60 percent of GDP ($3\%/5\% = 0.6 = 60\%$). The interesting point about this formula is that convergence occurs whether the initial level of debt is higher or lower than d*. If the level of debt begins at a higher it will fall accordingly; if it is lower it will rise.

The formula described above also demonstrates the dangers of a stagnating or deflationary economy. If real economic growth stagnates while prices remain stable ($g = 0$), the country can afford absolutely no deficit at all without the debt/GDP ratio rising in the long term. Similarly, if prices fall by 2 percent (for example in order to restore lost competitiveness) and the economy grows by 2 percent in real terms (nominal growth 0 percent) any deficit at all will increase the debt.

Conversely, this formula also explains why the Greek debt/GDP ratio actually fell from 110 percent to 100 percent before the crisis even though the country violated the Stability and Growth Pact each year from the introduction of the euro in 2002. With nominal annual growth of about 7 percent from 2002 to 2007 the Greek debt/GDP ratio would have fallen even with budget deficits of up to 7 percent.

tions for economic policy in the rest of the eurozone, focusing particularly on the northern members with weak wage growth and persistent current account surpluses. All the scenarios shared the following basic assumptions:

- ▶ Economic growth and GDP inflation will occur as predicted by the EU Commission in its spring 2011 forecast.
- ▶ The countries will carry through the budget consolidation measures announced in 2010 and early 2011. The required tax increases and spending cuts are politically enforceable and there will be no delays worth discussing. All countries except Ireland achieve a budget deficit of 3 percent by 2013, and deficits continue to fall thereafter until their state budgets are balanced. Ireland achieves a budget deficit of 3 percent by 2014. Countries which

already have a deficit below 3 percent continue their consolidation.

- ▶ The crisis countries will use wage restraint to address their relative loss of competitiveness since 1999 compared to the rest of the euro area. We assume that relative unit labour costs will fall by a total of 12 percent in Greece, Portugal and Spain (1.5 percentage points per annum until 2017, then 1 percentage point per annum until 2020) compared to the rest of the euro area. For Italy, we assume a correction of 5 percent while for Ireland and France, no correction is assumed.³⁶ If wages in

³⁶ These assumptions are in line with findings i.e. by Sebastian Dullien and Ulrich Fritsche, "How Bad Is Divergence in the Euro Zone? Lessons from the United States and Germany", *Journal of Post Keynesian Economics* 31, no. 3 (2009): 431–57, that Italy has not lost as much competitiveness as

the rest of the euro area rise sufficiently strongly, this reduction can be achieved through a slowing of wage growth or stagnating nominal wages; if nominal wages in the rest of the euro area were to stagnate this would imply cuts in nominal wages in the problem states.

- ▶ Plausible medium-term growth scenarios were applied. For 2010 and 2011 we used the data from the EU Commission's autumn projection. For 2012, data on Spain was updated according to more recent economic indicators which generally made the EU Commission's forecast look too optimistic. We assume a stagnation for Spain in 2012. After that, we assumed that lost competitiveness, problems in the banking sector and deep spending cuts will prevent these countries returning to decent growth before the middle of the decade, except for Italy which seems to be burdened with more fundamental supply side problems and low trend growth. Table 4 in the Appendix (p. 37) lists the growth assumptions.
- ▶ For Greece, the calculations have been made without taking into account the private sector involvement and the debt buyback agreed upon at the Meeting of the Heads of State and Government on 21 July 2011. The effects of these measures will be discussed below in the text.

These assumptions thus do not take into account that there might be unforeseen events which strongly push up the debt level in a single country. If, for example, new problems were to appear in the banking sector of one of the affected countries and an overly expensive rescue path is chosen (as in the case of Ireland) the debt to GDP ratio of the country concerned could again grow more strongly. The troubles of Spain's small and medium-sized banks are far from over, for example, nor can we rule out the possibility of consolidation efforts causing political complications or even civil unrest. In these cases consolidation would be delayed and growth impaired, and as a consequence the debt would increase noticeably.

We investigated the following scenarios for economic policy in the rest of the eurozone:³⁷

Greece, Portugal and Spain and that Ireland has regained most of its lost competitiveness.

³⁷ Economic policy is understood here as the totality of financial policy, wage policy and regulatory measures with the potential to influence national trends for unit wage costs and overall economic demand. This does not imply that a government can precisely manage unit wage costs; what is

- ▶ *Scenario A* – extended status quo. The northern countries with external surpluses (Germany, the Netherlands, Austria, and Finland) continue to pursue their wage policies of 2002 to 2006; the other countries step in line. Nominal wages rise roughly in line with productivity.
- ▶ *Scenario B* – turnaround in wage policy: Nominal wages in the rest of the eurozone rise in line with the national productivity increase plus a premium at a level that causes unit labour costs in the whole of the eurozone to rise by 2 percent per year (the ECB's inflation target). Whereas unit labour costs in Portugal, Spain and Greece stagnate in this scenario, the rest of the eurozone experiences an annual increase in unit labour costs of about 2.2 percent. Scenarios A and B contain no growth boost through higher export demand from the rest of the currency union. It is conceivable that a boost could occur if wages in the rest of the eurozone rose more markedly, but economists disagree over how strong this effect would be. If such an effect were to occur, the difference in the decrease in debt between scenario A and scenario B would be even greater, and the debt level in scenario B would grow slower accordingly.
- ▶ *Scenario C* – growth boost from the north: As scenario B, but the 'problem' countries each receive a one percentage point growth boost from the rest of the eurozone in each year from 2011 to 2014. Stronger wage growth in the other euro-members reduces the gap in price competitiveness and also leads to positive demand and growth effects. Alternatively, such a scenario could arise through Germany applying its "debt brake" less strictly than originally envisaged.

Because the three scenarios investigate only the direct effects on the nominal growth of Portugal, Spain, Greece, Ireland, France and Italy, the positive effects of a policy of higher nominal wage increases in the other eurozone countries may well be underestimated. Possible indirect effects include higher inflation which would make budget consolidation easier first because bracket creep causes tax revenues to

important is that there are economic policy instruments that shift them in one direction or another. Unit wage costs can of course also be influenced by financial policy instruments that lead to stronger consumer demand and thus to greater demand for labour, as laid out in Sebastian Dullien, "Divergences in EMU: Scope of the Problem and Policy Options", *Intervention: European Journal of Economics and Economic Policies* 6, no. 1 (2009): 24–32.

increase and second as it increases nominal GDP and a lower debt/GDP ratio reduces interest payments in relation to GDP. Without the strict deflationary policy that scenario A (extended status quo) demands from the southern members the risk of further problems in the banking sector would be reduced and the economic growth in scenarios B and C would turn out to be higher.

Even with these rather cautious assumptions and excluding indirect effects, the influence of economic policy in the rest of the eurozone on the debt of the 'problem' countries is impressive. A cooperative policy in the rest of the eurozone would reduce the level of debt in Portugal, Spain and Greece by almost 20 percentage points within a decade.

If current economic policies in the rest of the currency union remain unchanged (scenario A), Greece's debt/GDP ratio is likely to reach more than 180 percent by 2017 before slowly falling again,³⁸ even if its consolidation programmes can be implemented without a hitch. Although there are individual cases where a country has lived with such a high level of debt for some time, this is well into the realm where a default becomes very probable.³⁹ Difficulties in implementing the consolidation programmes would undoubtedly raise the Greek debt to levels that are no longer viable.

Spain's debt would peak in 2017 at a maximum of less than 90 percent of GDP; Portugal's the same year at about 120 percent. The Irish debt-to-GDP ratio would peak in 2015 at a little above 120 percent. These levels correspond to what countries like Italy and Belgium have been able to sustain for long periods within the ECU.

In scenario B (stronger wage growth in the rest of the eurozone) Greece's debt rises no further than 156 percent of GDP and begins to fall again from 2014. Spain's debt reaches a maximum of 76 percent. Portugal's and Spain's debt level would start falling again in 2016. For Italy, the debt-to-GDP ratio would start declining already in 2012 and France's debt-to-GDP level would never rise above 90 percent. The level Greece's debt would peak at is very high, but not necessarily unbearable. Belgium's debt hit 140.8 per-

cent of GDP in 1993 before shrinking to about 88 percent by 2007 without the government being forced into default, while even during a period of weak growth Italy's debt fell from 132 percent of GDP in 1998 to 112 percent in 2007.

Scenario C (growth boost from the north) shows a faster decline in the debt/GDP ratio than scenario B, with improvement for Greece and Portugal starting in 2013 and Spain following in 2014. For all countries, the levels of peak debt are also 3 to 4 percentage points lower than those in scenario B.

Greece

The projection shows that Greece's financial situation is extremely precarious and that the country's default might not be preventable without other countries assuming Greece's liabilities. This conclusion also holds when one takes into account the private sector involvement and debt buy-backs which have been agreed upon at the meeting of the Heads of State and Government of the euro area on 21 July 2011. These measures, which include a complicated debt-swap and the purchase of Greek securities at prices below par, are seen to reduce the Greek debt-to-GDP ratio by about 11.6 percent.⁴⁰ Even this reduction, however, would only bring Greek debt at the projected peak close to 170 percent of GDP, a value still considered to be highly unstable and probably not sustainable.

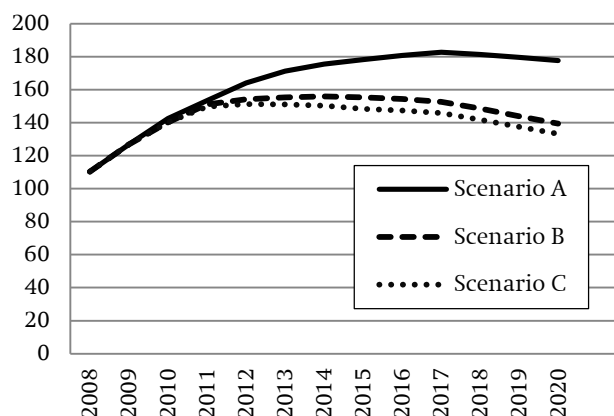
One might argue that Greece's recent history from 2002 to 2008 support the fact that nevertheless the Greek problems are liquidity problems. After all, the debt to GDP ratio fell to a little more than 100 percent even though the country ran deficits above the Maastricht target. Moreover, given the debt arithmetics, even with nominal GDP growth of just 4 percent (2 percent real plus 2 percent inflation), Greece would have been able to sustain its existing debt at just over 100 percent of GDP with a permanent budget deficit of 4 percent of GDP. However, this line of argument overlooks the point that by now the macroeconomics situation of Greece with its high deficits and its lost competitiveness calls for harsh budget cuts which in turn make a nominal growth rate of 4 percent all but impossible.

³⁸ Note that this figure is higher than the one published in Sebastian Dullien and Daniela Schwarzer, *Umgang mit Staatsbankrotten in der Eurozone*, SWP-Studie 19/2010 (Berlin: Stiftung Wissenschaft und Politik, July 2010), as Greek debt figures were revised.

³⁹ Carmen M. Reinhart and Kenneth S. Rogoff, *This Time Is Different: Eight Centuries of Financial Folly* (Princeton and Woodstock: Princeton University Press, 2009).

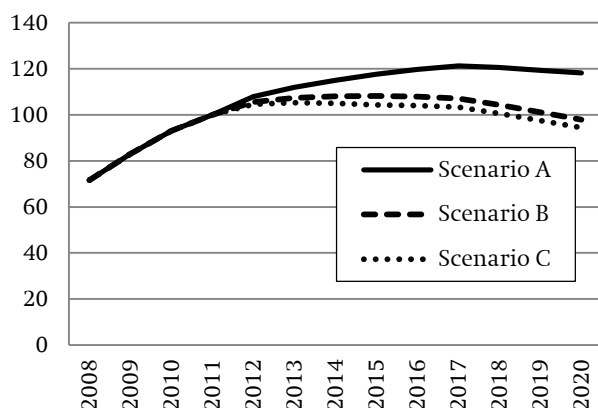
⁴⁰ See for more detailed information: Background document on the offer by the International Institute of Finance (IIF) and on Debt Buy Back (DBB), Internet source: <http://www.european-council.europa.eu/media/326884/124064.pdf> (accessed 27 August 2011).

Figure 3
Debt-to-GDP-ratio Greece (percent)



Source: own calculations.

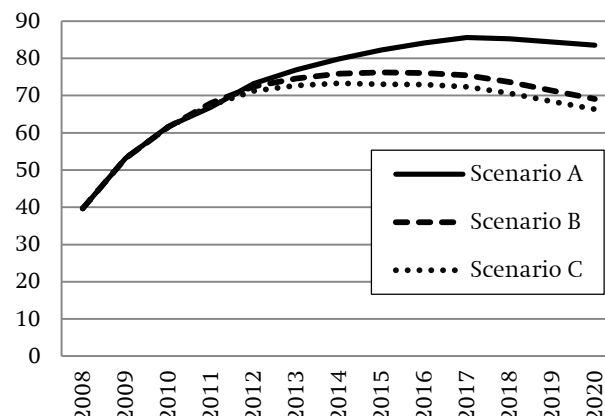
Figure 4
Debt-to-GDP-ratio Portugal (percent)



Source: own calculations.

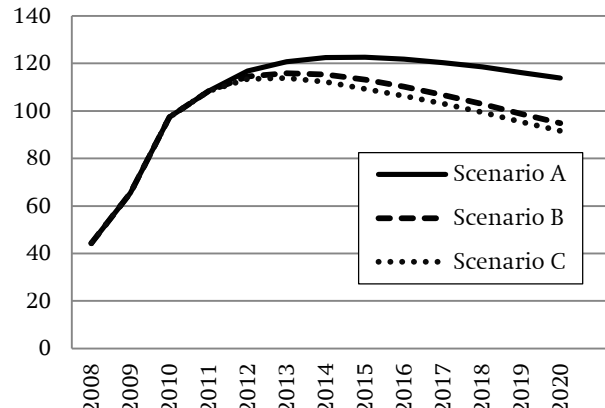
From this point of view, Greece clearly has a solvency problem. If the budget deficit of almost 14 percent of GDP in 2009 is reduced to 3 percent by 2013, the negative feedback effects (multiplier effects) of budget consolidation on private-sector economic activity will in all likelihood continue to make a significant dent in the nominal gross domestic product as has already been observed since the beginning of the austerity measures, possibly reducing it more strongly than in the simulation described above. In this case the debt/GDP ratio will continue to grow automatically. Even though scenario A is not overly pessimistic in its assumptions for economic growth and the implementation of austerity measures, it still shows public debt rising to about 180 percent of GDP over the coming years.

Figure 5
Debt-to-GDP-ratio Spain (percent)



Source: own calculations.

Figure 6
Debt-to-GDP-ratio Ireland (percent)

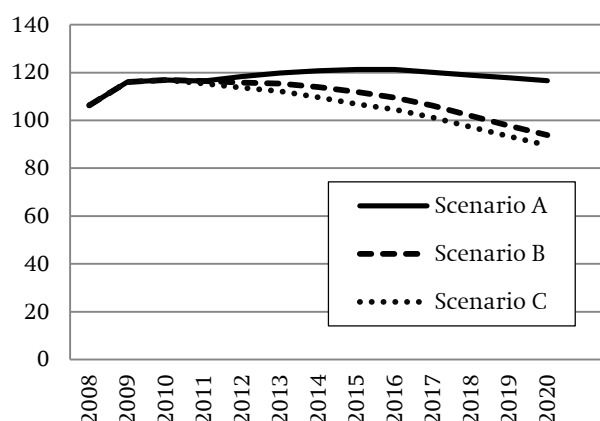


Source: own calculations.

Under current circumstances Greece's chances of growing its way out of the crisis are poor, because it can do little to improve competitiveness of its own volition. Any improvement associated with wage deflation would be liable to cause difficulties in the financial sector and hamper growth still further. As a result the debt/GDP ratio could even increase.

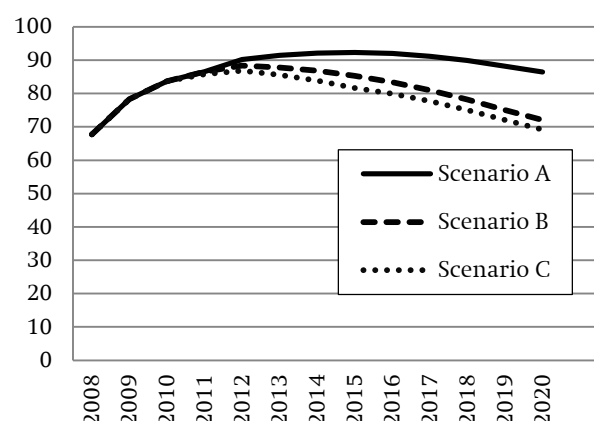
If the consolidation process continues to be delayed, for example due to the apparent operational problems in generating the intended tax revenue, further social unrest and political protests which are likely to be fuelled by the ongoing recession, or if exports revive only slowly despite a real devaluation, the debt could conceivably reach almost 200 percent of GDP. At normal interest rates of around 5 percent, debt service would then consume 20–25 percent of the government budget – and if Greece at some point

Figure 7
Debt-to-GDP-ratio Italy (percent)



Source: own calculations.

Figure 8
Debt-to-GDP-ratio France (percent)



Source: own calculations.

would return to the market, the proportion would increase accordingly. From political, economic and social perspectives Greece would be hard pushed to shoulder this burden. So as not to beat about the bush: there are convincing reasons to believe that as long as the economic policy of the rest of the eurozone remains unchanged Greece will become insolvent, and possibly will anyway even if the Northern part of the EMU changes towards a more cooperative policy stance.

Ireland

Ireland was the second EMU country to receive loans from the IMF and the European partners in December 2010. The country is a special case insofar as that the

huge increase in its public debt over the past 24 months is mostly due to banking rescue packages. It has been the necessity of financing failing banks that pushed the budget deficit to more than 30 percent of GDP in 2010. Consequently the debt/GDP ratio shot upwards as can be seen in figure 6. As our simulation shows, as long as no new banking problems resurface, the Irish situation is less dire than that of Greece. The debt/GDP ratio would peak at slightly above 120 percent in 2015 and would decline from that point onwards, even if the Northern surplus countries in EMU stick to their wage policy. This debt level is undoubtedly very high, but it is at a level which has been survived (and reversed) by Belgium and Italy in the 1990s, as noted above. If there is a shift in wage policies in Germany, Austria and the Netherlands, the Irish debt level might even peak by 2013. The difference between Ireland on the one hand and Greece, Portugal and Spain on the other is that Ireland does not need to correct its unit labour cost position anymore and hence does not need any additional domestic deflation. This makes the debt dynamics less lethal.

However, it would be wrong to conclude from this simulation that Ireland is out of the woods. As stated above, we have assumed that no new problems emerge in the banking sector, but this is far from assured. Moreover, it cannot be excluded that the austerity packages ultimately damage growth to a larger extent than assumed in our scenarios. Also a deterioration of the global economic situation could make the growth, and hence solvability, outlook for Ireland more severe. This again would mean a worsening of the solvency situation. However, there are also bright spots in the Irish situation. Ireland has to a large extent corrected the overvaluation and its current account is quickly moving towards balance. This all points towards Ireland having reasonable prospects of benefiting from external demand growth and thereby remaining solvent over the coming years.

Portugal

Among the other 'problem' countries, Portugal's situation is generally perceived as the most precarious, and it has been the third country to turn to the IMF and the European partners for support. Looking at our simulation, this turns out to be true. While the current debt level itself does not look overly excessive in European (or OECD comparison), the debt dynamics are frightening. The debt level is only seen to start

Table 3

Budget deficits, state debt and current account balances in the five problem economies 2007–2012 (percent of GDP)

<i>General government balance</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>
Greece	-6.7	-9.8	-15.5	-10.4	-8.0	-6.9
Ireland	0.1	-7.3	-14.2	-32.0	-10.3	-8.6
Portugal	-3.2	-3.5	-10.1	-9.1	-5.9	-4.5
Spain	1.9	-4.1	-11.1	-9.2	-6.1	-5.2
Italy	-1.5	-2.7	-5.3	-4.5	-4.0	-2.4
France	-2.8	-3.3	-7.6	-7.1	-5.9	-4.6
<i>General government gross debt</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>
Greece	105.4	110.7	127.1	142.8	165.6	189.1
Ireland	24.9	44.4	65.2	94.9	109.3	115.4
Portugal	68.3	71.6	83.0	92.9	106.0	111.8
Spain	36.1	39.8	53.3	60.1	67.4	70.2
Italy	103.6	106.3	116.1	119.0	121.1	121.4
France	64.2	68.2	79.0	82.3	86.8	89.4
<i>Current account balance</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>	<i>2010</i>	<i>2011</i>	<i>2012</i>
Greece	-14.4	-14.7	-11.0	-10.5	-8.4	-6.7
Ireland	-5.3	-5.7	-2.9	-0.5	1.8	1.9
Portugal	-10.2	-12.6	-10.9	-9.9	-8.6	-6.4
Spain	-10.0	-9.6	-5.2	-4.6	-3.8	-3.1
France	-1.0	-1.7	-1.5	-1.7	-2.7	-2.5
Italy	-2.4	-2.9	-2.1	-3.3	-3.5	-3.0

Source: International Monetary Fund, *World Economic Outlook Database*, September 2011.

decreasing in the second half of the decade and reaches 110 percent of GDP before doing so. However, the scenarios shown above hint that in principle, the problems should be manageable. According to the simulations, Portugal does not necessarily have a genuine solvency problem. Even scenario A keeps the debt level at a point which has been survived by other countries even if the debt certainly is high.

A central issue in Portugal is regaining competitiveness. According to standard estimations such as those presented in Dullien and Fritsche (see note 36), Portugal has seen excessive unit labour cost increases over the past decade and little has been undertaken to correct them even though the country has experienced a dismal growth performance since 2002. The problem in Portugal seems to be that wage and cost dynamics react only very slowly to increases in unemployment. If this trend continues, it would mean that the growth assumptions made in the simulation might turn out to be much too optimistic. This in turn would mean that the debt-to-GDP ratio would increase much more than in the projection.

Spain, Italy and France

Even though Spain has often been discussed as the next possible candidate for EFSF loans, its situation looks significantly better than that of Greece, Ireland and Portugal. Even in scenario A, the debt/GDP ratio stabilises not far from the current German or French debt/GDP ratio, a fact that clearly points towards solvency of the Spanish debt.

Italy's solvency also does not seem to be a reason for concern according to the simulation. While the country already has a high debt-to-GDP ratio which is set to increase before it will fall again, the dynamics are rather benign: Even under the assumption of a low medium-term growth and non-cooperative economic policy from the surplus countries in the EMU, the Italian debt level will only slightly rise above 120 percent of GDP, a mere 5 percentage points above the current level. Moreover, the moderate current account deficit would suggest that the government can cover its borrowing needs largely from domestic investors. Particularly the current low budget deficit in Italy is a

sign of solvency: Without the need for large deficit cuts, the economic dynamic is more likely to remain intact and hence the debt dynamics should be under control.⁴¹ Additionally, the moderate current account deficit suggests little problem with international competitiveness and indicates that the government debt is largely funded at home.

According to the simulations, fears about the sustainability of French public finances seem to be misguided: the debt level would peak at a little above 90 percent of GDP and then decline. If the Northern EMU countries run a more cooperative economic policy, the debt level could even be stabilised significantly below 90 percent. One of France's advantages is that the country does not seem to have severe competitiveness problems – at least when measured by the development of nominal unit labour costs relative to the EMU as a whole.

Remaining dangers of self-fulfilling crises

Nevertheless, this rather reassuring assessment of debt dynamics does not mean that countries such as Spain, Italy and France are safe from liquidity problems which might lead to a self-fulfilling fiscal crisis as described above. The increase in bond yields for Spain and Italy and the resulting problems for government finances over the summer of 2011 are evidence that a turn in market sentiment could actually push these countries into insolvency.

Even though France has a much lower projected debt-to-GDP ratio, there is a significant risk for such a self-fulfilling crisis even for the euro area's second largest economy: France still has a large fiscal deficit which needs to be financed with new debt. In addition, France is used to low interest rates and low spreads over German bunds. Upward potential for France is therefore high. This is even more so as the results from our simulation indicate a high risk of France losing its AAA rating: France is already the country among the triple A countries with the highest debt-to-GDP ratio. An increase towards 90 percent would make a downgrade likely, which in turn could set in motion a fire sale of French bonds and a steep

increase in the yields demanded by investors which in turn could threaten France's fiscal sustainability.

This problem might become more acute if Spain and/or Italy need EFSF assistance in the future. In such a case, the current volume of the EFSM/ESM fund might not be sufficient. If it then needs to be enlarged and France has to put more capital into it, this in itself might endanger France's AAA-rating: Even though in principle, injecting capital into the EFSF/ESM should not impact on a country's solvency position as long as the capital is lent only to illiquid, but not insolvent, partner countries (and hence is not lost); some rating agencies have hinted that they view the issue differently. As injecting capital into the EFSF/ESM means that member countries increase their gross liabilities, this could lead to a downgrade of France's rating.

⁴¹ A similar assessment is reached in: Marco Stringa, *Italien: Tragfähigkeit der Verschuldung*, Deutsche Bank Frankfurt Economic Research Bureau, Konjunktur und Märkte, 17 February 2011, pp. 3–9.

Conclusions and Outlook

The analysis shows that Greece has severe solvency problems. Solvency meanwhile still seems to be manageable for Ireland and Portugal, even though the latter has to deal with significant competitiveness issues before growth can resume. Even if solvency is not a pressing issue for Spain and Italy, they could easily get into payment difficulties if market perceptions worsen and the risk premium on their borrowing rises further. Both are susceptible to self-fulfilling financial crises, as could be observed over July and August 2011. Even France could slip into such a downward spiral, in particular if it has to bear further burdens for supporting other EMU members.

The prospects for consolidation in the ‘problem’ countries depend not only on the efforts of their governments to make cuts but also on the policies of the other member states. So far there is no sign of the countries with external surpluses adopting policies through which they could themselves help to reduce the imbalances and hence help crisis countries outgrow their debt burden. One reason for this is that governments possess only a limited influence over wage levels in the private sector, for example through setting minimum wages and general declarations of intent. In Germany in particular, neither the governing parties nor the opposition seems to be set on decisively altering the wage trend, while the introduction of the “debt brake” starting from 2011 makes fiscal incentives to boost consumption unlikely. Nor is it likely that consumers will be encouraged to spend and businesses taxed more heavily in return. This means that scenario A, in which the ‘problem’ countries have to solve their competitiveness problems without further assistance, is the most likely.

Meanwhile, the “donor countries” insist on the obligation of the deficit states to improve their price competitiveness by reducing their unit labour costs.⁴²

⁴² See also the German position on coordinating economic policy in advance of the first meeting of the Van Rompuy Task Force: “We need intensified coordination with great visibility and a concentration on weakly competitive member states.” Translated from Bundesministerium der Finanzen, “Neue Europäische Taskforce” http://www.bundesfinanzministerium.de/nm_1270/DE/

Structural reforms and restrictive budgetary policies of the kind that are being currently implemented, however, have deflationary effects which could seriously deteriorate the economic and budgetary situation of the over-indebted countries.

In consequence, the probability of both liquidity crises as well as solvency crises in some of the countries remains high. At some point, the debt of countries other than Greece may have to be restructured, incurring further costs for the countries with external surpluses, especially if the process unfolds chaotically. In particular if a large country like Spain were hit, this would place huge political strains not only on the affected government, but the European Union as a whole.

The fact that economic growth is central to solve the debt crisis has only partly found its way into the political debate. The further the crisis evolves, the more it becomes obvious that debt crisis management requires a euro area growth strategy which should include investment in infrastructure as well as education, research and development of critical sectors. There is an urgent need to connect three debates: the one on debt crisis management; the one on the EU2020 growth strategy, which needs to be critically reworked given the urgent needs of the euro area periphery; and the debate on the next financial framework of the EU. Even if a growth strategy may be expensive, it does not necessarily imply a further increase in budget deficits or public debts. For example, if some sort of taxes are increased and the money is spent on growth-enhancing projects, the net effect on economic growth can be expected to be positive without a deterioration of public finances.

In parallel to debt crisis management, the building of an effective mechanism against financial crises needs to be pursued. It should consist of five complementary components: a European liquidity fund which could be constructed out of the ESM, European instruments to recapitalise banks, an insolvency procedure for governments, jointly guaranteed “euro-bonds” for a senior tranche of national public debt

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and closer economic and budgetary policy coordination. These measures could deal with both liquidity and solvency problems of individual states, reduce moral hazard and prevent self-fulfilling financial crises. Implementing such a mechanism in times where political energy is devoted to crisis management is indisputably a very hard task. But a commitment of the member states to a convincing long-term mechanism could be part of a fruitful strategy to overtake markets in steering the sovereign debt crisis in the euro area.

In building such a mechanism, it is important that it needs to be decided upon in one big move. Attempting to put single elements in place without moving forward on the other issues might in contrast prove to be counter-productive. For example, putting in place a sovereign default mechanism without having a large ESM or the euro-bonds, or without having provided for a possibility to quickly recapitalise banks, might actually cause a financial market panic. Equally, simply increasing the ESM's volume risks the re-rating of countries such as France and could lead to a breakdown of the rescue funds.

Elections are coming up in some important EU member states: France elects a new president in May 2012 and Germany will have a new Bundestag by October 2013 at the latest. Nonetheless, France and Germany will have a key role to play – as they did in shaping the currency union – when it comes to thrashing out a compromise that all members, including the highly indebted states, can live with. Perhaps precisely because they have different ideas about the architecture of the eurozone and the substance of appropriate economic policy, France and Germany seem predestined for this task.

The five-component model presented here could serve as the basis for such a compromise. The package could be sweetened for those “strong states” with medium to strong competitiveness and no great debt problems (Germany, Austria, the Netherlands, Finland and with caveats France) by including an orderly procedure for dealing with bankrupt states that would reduce the risks of contagion. It would be in the interests of these states if the markets were to differentiate their long-term assessments of euro area states, in particular through the instrument of Red Bonds.

For relatively highly indebted and weakly competitive countries the prospect of low-interest borrowing and a new liquidity facility granting bridging loans within the framework of an orderly procedure could be attractive. A proper insolvency procedure is an

essential component of such an arrangement, to provide transparency and dependability for creditors and offer insolvent states a way out of the debt trap. Most importantly of all, this permanent crisis management mechanism would minimise the risk of self-fulfilling financial crises, to the benefit of all states.

Appendix: Tables

Table 4

Assumptions: Annual change in real GDP in percent for scenarios A and B

	<i>Spain</i>	<i>Greece</i>	<i>Portugal</i>	<i>Ireland</i>	<i>Italy</i>	<i>France</i>
2009	-3.7	-2.0	-2.5	-7.6	-5.2	-2.6
2010	-0.1	-4.5	1.3	-0.2	1.3	1.6
2011	0.8	-3.9	-2.2	-1.0	1.0	1.8
2012	0.0	-2.0	-1.8	0.0	1.3	2.0
2013	0.5	-1.0	0.5	1.0	1.0	2.0
2014	1.0	0.5	1.0	1.0	1.0	2.0
2015	1.0	1.0	1.0	1.5	1.0	2.0
2016	1.0	1.0	1.0	2.0	1.0	2.0
2017	1.0	1.0	1.0	2.0	1.0	2.0
2018	2.0	2.0	2.0	2.0	1.0	2.0
2019	2.0	2.0	2.0	2.0	1.0	2.0
2020	2.0	2.0	2.0	2.0	1.0	2.0

Table 5

Assumptions: Annual change in real GDP in percent for scenarios C

	<i>Spain</i>	<i>Greece</i>	<i>Portugal</i>	<i>Ireland</i>	<i>Italy</i>	<i>France</i>
2009	-3.7	-2.0	-2.5	-7.6	-5.2	-2.6
2010	-0.1	-4.5	1.3	-0.2	1.3	1.6
2011	1.8	-2.9	-1.2	-1.0	2.0	2.8
2012	1.0	-1.0	-0.8	1.0	2.3	3.0
2013	1.5	0.0	1.5	2.0	1.5	3.0
2014	2.0	1.5	2.0	2.0	2.0	3.0
2015	2.0	2.0	2.0	2.5	2.0	3.0
2016	1.0	1.0	1.0	2.0	1.0	2.0
2017	1.0	1.0	1.0	2.0	1.0	2.0
2018	2.0	2.0	2.0	2.0	2.0	2.0
2019	2.0	2.0	2.0	2.0	2.0	2.0
2020	2.0	2.0	2.0	2.0	2.0	2.0

Table 6**Model outcomes: Debt in percent of GDP for scenarios A, B and C for Spain, Portugal and Greece**

	<i>Spain</i>			<i>Portugal</i>			<i>Greece</i>		
	<i>A</i>	<i>B</i>	<i>C</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>A</i>	<i>B</i>	<i>C</i>
2008	39.7	39.7	39.7	71.6	71.6	71.6	110.3	110.3	110.3
2009	53.2	53.2	53.2	83.0	83.0	83.0	126.8	126.8	126.8
2010	61.7	61.6	61.6	93.0	93.0	93.0	142.5	140.2	140.2
2011	66.9	67.9	67.3	99.9	99.9	99.9	153.4	151.1	149.6
2012	73.2	72.5	71.2	107.8	105.5	104.5	164.0	154.1	151.3
2013	76.9	74.6	72.7	111.9	107.3	105.3	171.2	155.3	151.0
2014	79.8	75.9	73.3	115.0	108.0	105.0	175.4	156.0	150.2
2015	82.2	76.2	73.0	117.6	108.2	104.3	178.3	155.4	148.3
2016	84.1	76.1	72.9	119.7	107.9	104.0	180.7	154.3	147.3
2017	85.6	75.5	72.4	121.3	107.1	103.3	182.6	152.7	145.9
2018	85.2	73.6	70.6	120.6	104.3	100.6	181.3	148.4	141.8
2019	84.4	71.3	68.4	119.4	101.0	97.5	179.5	143.8	137.4
2020	83.5	69.1	66.3	118.2	97.9	94.4	177.7	139.4	133.2

Table 7**Model outcomes: Debt in percent of GDP for scenarios A, B and C for Spain, Portugal and Greece**

	<i>Ireland</i>			<i>Italy</i>			<i>France</i>		
	<i>A</i>	<i>B</i>	<i>C</i>	<i>A</i>	<i>B</i>	<i>C</i>	<i>A</i>	<i>B</i>	<i>C</i>
2008	44.3	44.3	44.3	106.3	106.3	106.3	67.7	67.7	67.7
2009	65.5	65.5	65.5	116.1	116.1	116.1	78.3	78.3	78.3
2010	97.4	97.4	97.4	116.8	116.8	116.8	83.7	83.7	83.7
2011	108.3	108.3	108.3	116.5	116.5	115.4	86.6	86.6	85.8
2012	116.8	114.5	113.4	118.3	115.8	113.7	90.2	88.4	86.9
2013	120.6	115.9	113.9	119.8	115.4	112.2	91.4	87.8	85.6
2014	122.4	115.3	112.3	120.8	113.9	109.7	92.1	86.8	83.8
2015	122.6	113.2	109.2	121.3	112.0	106.8	92.3	85.3	81.7
2016	121.7	110.1	106.3	121.3	109.5	104.5	92.0	83.4	79.9
2017	120.3	106.7	103.0	120.1	106.1	101.3	91.2	81.0	77.7
2018	118.5	102.9	99.4	118.9	101.9	97.2	89.9	78.2	75.1
2019	116.2	98.8	95.4	117.7	97.8	93.3	88.2	75.1	72.0
2020	113.9	94.8	91.5	116.6	93.8	89.5	86.4	72.0	69.1