

# The European Sovereign Debt Crisis<sup>†</sup>

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**T**he capacity of the euro-member countries to withstand negative macroeconomic and financial shocks was identified as a major challenge for the success of the euro from the beginning (in this journal, for example, see Feldstein 1997; Wyplosz 1997; Lane 2006). By switching off the option for national currency devaluations, a traditional adjustment mechanism between national economies was eliminated. Moreover, the euro area did not match the design of the “dollar union” of the United States in key respects, since the monetary union was not accompanied by a significant degree of banking union or fiscal union. Rather, it was deemed feasible to retain national responsibility for financial regulation and fiscal policy.

On the one side, the ability of national governments to borrow in a common currency poses obvious free-rider problems if there are strong incentives to bail out a country that borrows excessively (Buiter, Corsetti, and Roubini 1993; Beetsma and Uhlig 1999). The original design of the euro sought to address the over-borrowing incentive problem in two ways. First, the Stability and Growth Pact set (somewhat arbitrary) limits on the size of annual budget deficits at 3 percent of GDP and the stock of public debt of 60 percent of GDP. Second, the rules included a “no bailout” clause, with the implication that a sovereign default would occur if a national government failed to meet its debt obligations.

On the other side, the elimination of national currencies meant that national fiscal policies took on additional importance as a tool for countercyclical macroeconomic policy (Wyplosz 1997; Gali and Monacelli 2008; Gali 2010). Moreover, since

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<sup>†</sup>To access the Appendix, visit <http://dx.doi.org/10.1257/jep.26.3.49>.

banking regulation remained a national responsibility, individual governments continued to carry the risks of a banking crisis: both the direct fiscal costs (if governments end up recapitalizing banks or providing other forms of fiscal support) and also the indirect fiscal costs since GDP and tax revenues tend to remain low for a sustained period in the aftermath of a banking crisis (Honohan and Klingebiel 2003; Reinhart and Rogoff 2009).

There are three phases in the relationship between the euro and the European sovereign debt crisis. First, the initial institutional design of the euro plausibly increased fiscal risks during the pre-crisis period. Second, once the crisis occurred, these design flaws amplified the fiscal impact of the crisis dynamics through multiple channels. Third, the restrictions imposed by monetary union also shape the duration and tempo of the anticipated post-crisis recovery period, along with Europe's chaotic political response and failure to have institutions in place for crisis management. We take up these three phases in the next three major sections of this article, and then turn to reforms that might improve the resilience of the euro area to future fiscal shocks.

As will be clear from the analysis below, the sovereign debt crisis is deeply intertwined with the banking crisis and macroeconomic imbalances that afflict the euro area. Shambaugh (2012) provides an accessible overview of the euro's broader economic crisis. Even if the crisis was not originally fiscal in nature, it is now a full-blown sovereign debt crisis and our focus here is on understanding the fiscal dimensions of the euro crisis.

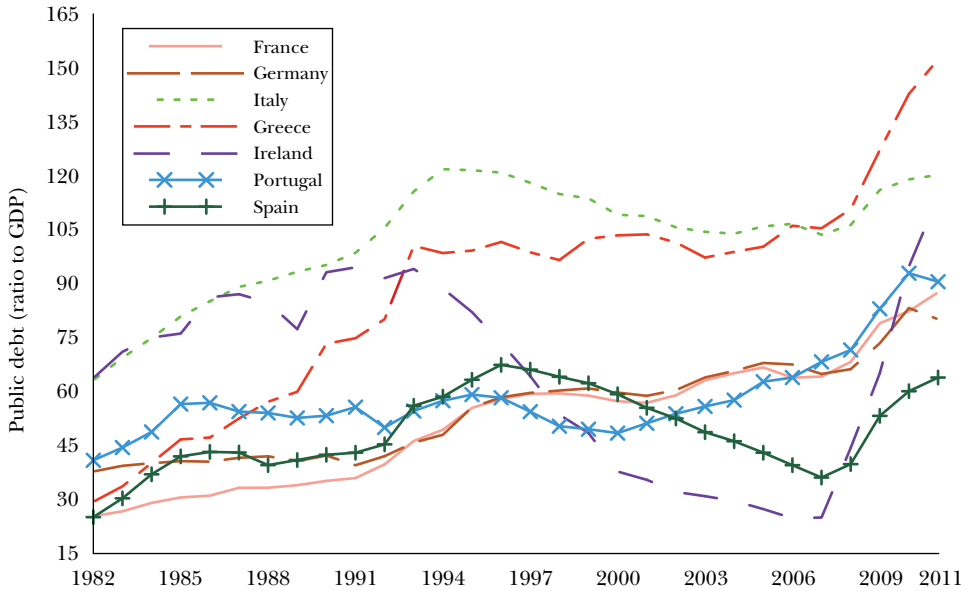
## **Pre-Crisis Risk Factors**

Public debt for the aggregate euro area did not, at least at first glance, appear to be a looming problem in the mid 2000s. During the previous decade, the euro area and the United States shared broadly similar debt dynamics. For example, the ratio of gross public debt to GDP in 1995 was about 60 percent for the United States and 70 percent for the set of countries that would later form the euro area, based on my calculations with data from the IMF Public Debt Database. In both the United States and the euro area, the debt/GDP ratios declined in the late 1990s, but had returned to mid 1990s levels by 2007. The debt/GDP ratios then climbed during the crisis, growing more quickly for the United States than for the euro area.<sup>1</sup>

However, the aggregate European data mask considerable variation at the individual country level. Figure 1 shows the evolution of public debt ratios for seven key euro area countries over 1982–2011. These countries were chosen because Germany, France, Italy, and Spain are the four largest member economies, while the fiscal crisis so far has been most severe in Greece, Ireland, and Portugal (of course, Italy

<sup>1</sup> For a detailed country-by-country breakdown of the evolution of public sector debt across these seven countries from 1992–2011, see the Appendix available online with this paper at (<http://ejep.org>).

Figure 1  
The Evolution of Public Debt, 1982–2011



Source: Data from IMF Public Debt Database.

and Spain have also been flagged as fiscally vulnerable countries during the crisis). Clearly, these countries have quite different debt histories.

In one group, both Italy and Greece had debt/GDP ratios above 90 percent since the early 1990s; these countries never achieved the 60 percent debt/GDP limit specified in the European fiscal rules. Ireland, Portugal, and Spain each achieved significant declines in debt ratios in the second half of the 1990s, dipping below the 60 percent ceiling. While the Portuguese debt ratio began to climb from 2000 onwards, rapid output growth in Ireland and Spain contributed to sizable reductions in debt–output ratios up to 2007. Finally, France and Germany had stable debt/GDP ratios at around 60 percent in the decade prior to the onset of the crisis; indeed, their debt ratios were far above the corresponding values for Ireland and Spain during 2002–2007. Thus, circa 2007, sovereign debt levels were elevated for Greece and Italy, and the trend for Portugal was also worrisome, but the fiscal positions of Ireland and Spain looked relatively healthy. Moreover, the low spreads on sovereign debt also indicated that markets did not expect substantial default risk and certainly not a fiscal crisis of the scale that could engulf the euro system as a whole.

However, with the benefit of hindsight, 1999–2007 looks like a period in which good growth performance and a benign financial environment masked the accumulation of an array of macroeconomic, financial, and fiscal vulnerabilities (Wyplosz 2006; Caruana and Avdjiev 2012).

*Table 1*  
**Private Credit Dynamics**

	<i>Loans to private sector from domestic banks and other credit institutions (percent of GDP)</i>		
	<i>1998</i>	<i>2002</i>	<i>2007</i>
Greece	31.8	56.5	84.4
Ireland	81.2	104.4	184.3
Portugal	92.1	136.5	159.8
Spain	80.8	100.1	168.5
Italy	55.7	77.3	96.5
Germany	112.2	116.7	105.1
France	81.0	85.6	99.3

*Source:* World Bank Financial Database.

### **Financial Imbalances and External Imbalances**

A key predictor of a banking crisis is the scale of the preceding domestic credit boom (Gourinchas and Obstfeld 2012). Table 1 shows the evolution of credit/GDP ratios for the seven euro area countries. The European periphery experienced strong credit booms, in part because joining the euro zone meant that their banks could raise funds from international sources in their own currency—the euro—rather than their previous situation of borrowing in a currency not their own (say, U.S. dollars or German marks or British pounds) and then hoping that exchange rates would not move against them. In related fashion, lower interest rates and easier availability of credit stimulated consumption-related and property-related borrowing (Fagan and Gaspar 2007).

A related phenomenon was the increase in the dispersion and persistence of current account imbalances across the euro area. Table 2 shows that current account imbalances were quite small in the pre-euro 1993–1997 period. But, by the 2003–2007 period, Portugal (–9.2 percent of GDP), Greece (–9.1 percent), and Spain (–7.0 percent) were all running very large external deficits. Conversely, Germany ran very large external surpluses averaging 5.1 percent of GDP, while the overall euro area current account balance was close to zero.

To the extent that current account imbalances accelerated income convergence by reallocating resources from capital-abundant high-income countries to capital-scarce low-income countries, this would be a positive gain from monetary union (Blanchard and Giavazzi 2002). Similarly, current account deficits might have facilitated consumption smoothing by the catch-up countries to the extent that current income levels were perceived to be below future income levels. However, if capital inflows rather fueled investment in capital that had little effect on future productivity growth (such as real estate) and delayed adjustment to structural shocks (such as increasing competition from Central and Eastern Europe and emerging Asia in the production of low-margin goods),

*Table 2*  
**Current Account Balances**  
*(percent of GDP)*

	1993–1997	1998–2002	2003–2007	2008–2011
Greece	-2.0	-5.9	-9.1	-11.1
Ireland	3.4	-0.2	-2.6	-1.6
Italy	2.1	0.2	-1.8	-2.9
Portugal	-2.4	-9.0	-9.2	-10.5
Spain	-0.6	-3.1	-7.0	-5.8
France	1.1	2.0	-0.2	-1.9
Germany	-0.9	-0.3	5.1	5.7

*Source:* International Monetary Fund's World Economic Outlook database.

then the accumulation of external imbalances posed significant macroeconomic risks (Blanchard 2007; Giavazzi and Spaventa 2011; Chen, Milesi-Ferretti, and Tressel forthcoming).

For countries running large and sustained external deficits, Blanchard (2007) identifies several risk factors. In terms of medium-term growth performance, a current account deficit can be harmful if increased expenditure on nontradables squeezes the tradables sector by bidding up wages and drawing resources away from industries that have more scope for productivity growth. This is especially risky inside a currency union, because nominal rigidities mean that the downward wage adjustment required once the deficit episode is over can only be gradually attained through a persistent increase in unemployment.

In addition, a large current account deficit poses short-term risks, if there is a sudden stop in funding markets such that the deficit must be narrowed quickly. Large and sudden capital flow reversals have often proven costly in terms of output contractions, rising unemployment, and asset price declines (Freund and Warnock 2007). A reversal in capital flows is also associated with a greater risk of a banking crisis, especially if capital flows have been intermediated through the domestic banking system.

### **The 2003–2007 Boom**

The most intense phase of the dispersion in credit growth and current account imbalances did not occur at the onset of the euro in 1999. Rather, there was a discrete increase during 2003–2007 (Lane and Pels 2012; Lane and McQuade 2012). A complete explanation for the timing of this second, more intense phase of current account deficits and credit booms is still lacking, but the simultaneous timing with the securitization boom in international financial markets, the U.S. subprime episode, and the decline in financial risk indices suggest that the answer may be found in the underlying dynamics of the global financial system and the unusually low long-term interest rates prevailing during this period.

The credit boom in this period was not primarily due to government borrowing. For Ireland and Spain, the government was not a net borrower during 2003–2007. Rather, households were the primary borrowers in Ireland and corporations in Spain, with the property boom fueling debt accumulation in both countries. In Portugal and Greece, the government and corporations were both significant borrowers, but these negative flows were partly offset during this period by significant net accumulation of financial assets by the household sector in these countries.

### **Failure to Tighten Fiscal Policy**

Looking back, the failure of national governments to tighten fiscal policy substantially during the 2003–2007 was a missed opportunity, especially during a period in which the private sector was taking on more risk. In some countries (Ireland and Spain), the credit and housing booms directly generated extra tax revenues, since rising asset prices, high construction activity, and capital inflows boosted the take from capital gains taxes, asset transaction taxes, and expenditure taxes. Faster-growing euro member countries also had inflation rates above the euro area average, which also boosted tax revenues through the non-indexation of many tax categories. Finally, low interest rates meant that debt servicing costs were below historical averages. However, these large-scale revenue windfalls were only partially used to improve fiscal positions, with the balance paid out in terms of extra public spending or tax cuts. Overall, fiscal policy became less countercyclical after the creation of the euro, undoing an improvement in cyclical performance that had been evident in the 1990s (Benetrix and Lane 2012).

A contributory factor in the failure to tighten fiscal policy was the poor performance of the analytical frameworks used to assess the sustainability of fiscal positions. In evaluating the cyclical conduct of fiscal policy from 2002–2007, domestic authorities and international organizations such as the IMF, OECD, and European Commission primarily focused on point estimates of the output gap in order to estimate the “cyclically adjusted” budget balance, without taking into account the distribution of macroeconomic, financial, and fiscal risks associated with the expansion in external imbalances, credit growth, sectoral debt levels, and housing prices. A more prudential and forward-looking approach to risk management would have suggested more aggressive actions to accumulate buffers that might help if or when the boom ended in a sudden and disruptive fashion (Lane 2010).

For the euro periphery, the 2008 global financial crisis triggered a major reassessment among investors of the sustainability of rapid credit growth and large external deficits. In turn, this took the form of significant private sector capital outflows, the tightening of credit conditions, and a shuddering halt in construction activity, with national banking systems grappling with the twin problems of rising estimates of loan losses and a liquidity squeeze in funding markets. In turn, the combined impact of domestic recessions, banking-sector distress, and the decline in risk appetite among international investors would fuel the conditions for a sovereign debt crisis.

## **The Financial Crisis and the Sovereign Debt Crisis**

August 2007 marked the first phase of the global financial crisis, with the initiation of liquidity operations by the European Central Bank. The high exposure of major European banks to losses in the U.S. market in asset-backed securities has been well documented, as has the dependence of these banks on U.S. money markets as a source of dollar finance (McGuire and von Peter 2009; Acharya and Schnabl 2010; Shin 2012). The global crisis entered a more acute phase in September 2008 with the collapse of Lehman Brothers. The severe global financial crisis in late 2008 and early 2009 shook Europe as much as the United States.

### **From Financial Shock to Sovereign Debt Crisis**

Through 2008 and 2009, there was relatively little concern about European sovereign debt. Instead, the focus was on the actions of the European Central Bank to address the global financial shock. In tandem with the other major central banks, it slashed short-term interest rates, provided extensive euro-denominated liquidity, and entered into currency swap arrangements to facilitate access by European banks to dollar-denominated liquidity.

But the global financial shock had asymmetric effects across the euro area. Cross-border financial flows dried up in late 2008, with investors repatriating funds to home markets and reassessing their international exposure levels (Milesi-Ferretti and Tille 2011). This process disproportionately affected countries with the greatest reliance on external funding, especially international short-term debt markets. Inside the euro area, Ireland was the most striking example: the high dependence of Ireland's banking system on international short-term funding prompted its government at the end of September 2008 to provide an extensive two-year liability guarantee to its banks (Honohan 2010; Lane 2011).

More generally, the global financial crisis prompted a reassessment of asset prices and growth prospects, especially for those countries that displayed macro-economic imbalances. For instance, Lane and Milesi-Ferretti (2011) show that the pre-crisis current account deficit and rate of domestic credit expansion are significant correlates of the scale of the decline in output and expenditure between 2007 and 2009, while Lane and Milesi-Ferretti (forthcoming) show that "above-normal" current account deficits during 2005–2008 were associated with sharp current account reversals and expenditure reductions between 2008–2010. The cessation of the credit boom was especially troubling for Ireland and Spain, since the construction sectors in these countries had grown rapidly. The decline in construction was a major shock to domestic economic activity, while abandoned projects and falling property prices indicated large prospective losses for banks that had made too many property-backed loans.

Still, euro area sovereign debt markets remained relatively calm during 2008 and most of 2009. During this period, the main focus was on stability of the area-wide banking system, with country-specific fiscal risks remaining in the background. Furthermore, the relatively low pre-crisis public debt ratios of Ireland and Spain

gave some comfort that these countries could absorb the likely fiscal costs associated with a medium-size banking crisis. Demand for sovereign debt of euro area countries was also propped up by banks that valued government bonds as highly rated collateral in obtaining short-term loans from the European Central Bank (Buiter and Sibert 2006).

In late 2009, the European sovereign debt crisis entered a new phase. Late that year, a number of countries reported larger-than-expected increases in deficit/GDP ratios. For example, fiscal revenues in Ireland and Spain fell much more quickly than GDP, as a result of the high sensitivity of tax revenues to declines in construction activity and asset prices. In addition, the scale of the recession and rising estimates of prospective banking-sector losses on bad loans in a number of countries also had a negative indirect impact on sovereign bond values, since investors recognized that a deteriorating banking sector posed fiscal risks (Mody and Sandri 2012).

However, the most shocking news originated in Greece. After the general election in October 2009, the new government announced a revised 2009 budget deficit forecast of 12.7 percent of GDP—more than double the previous estimate of 6.0 percent.<sup>2</sup> In addition, the Greek fiscal accounts for previous years were also revised to show significantly larger deficits. This revelation of extreme violation of the euro's fiscal rules on the part of Greece also shaped an influential political narrative of the crisis, which laid the primary blame on the fiscal irresponsibility of the peripheral nations, even though the underlying financial and macroeconomic imbalances were more important factors.

These adverse developments were reflected in rising spreads on sovereign bonds. For example, the annual spread on ten-year sovereign bond yields between Germany and countries such as Greece, Ireland, Portugal, Spain, and Italy was close to zero before the crisis. Remember that sovereign debts from these countries are all denominated in a common currency, the euro, so differences in expected yield mainly represent perceived credit risks and differences in volatility.

Figure 2 shows the behavior of country-level ten-year bond yields for seven euro area countries from October 2009 through June 2012. Three particularly problematic periods stand out. First, the Greek yield began to diverge from the group in early 2010, with Greece requiring official assistance in May 2010. Second, there was strong comovement between the Irish and Portuguese yields during 2010 and the first half of 2011 (Ireland was next to require a bailout in November 2010, with Portugal following in May 2011). Third, the yields on Italy and Spain have moved together, with these spreads at an intermediate level between the bailed out countries and the core countries of Germany and France. For Italy and Spain, the spread against Germany rose above 300 basis points in July 2011 and remained at elevated levels thereafter. In 2011, a visible spread also emerges between the French and

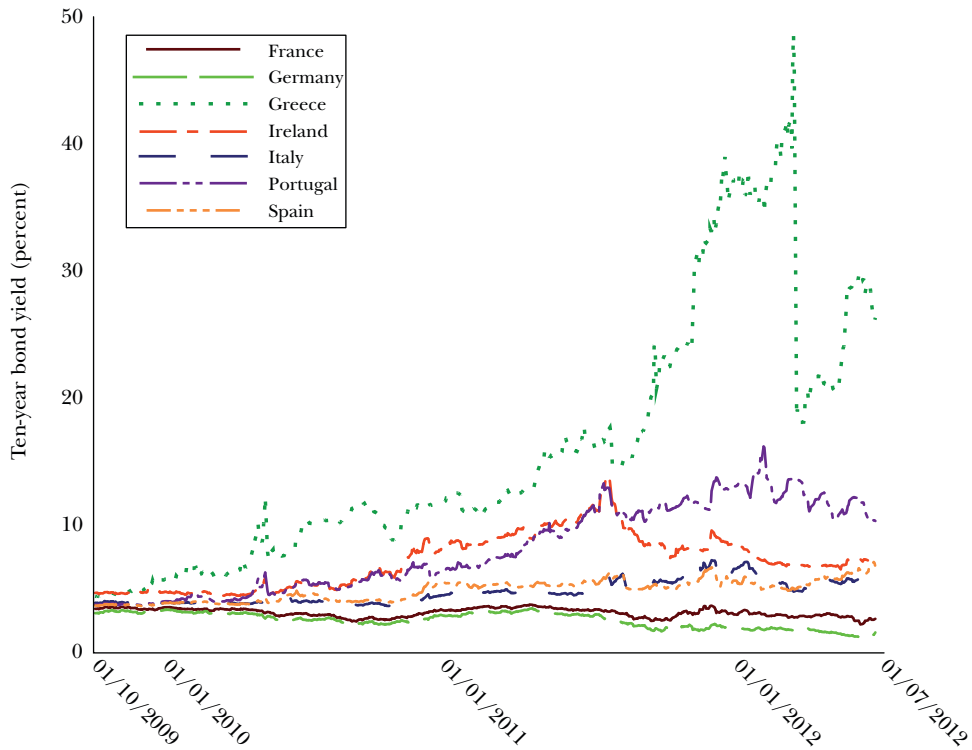
<sup>2</sup> See also Gibson, Hall, and Tavlás (2012). These authors also point out that the Greek announcement was coincidentally soon followed by the surprise request from Dubai World for a debt moratorium, such that the climate in international debt markets markedly deteriorated in October/November 2009.



Figure 2

**Yields on Ten-Year Sovereign Bonds, October 2009 to June 2012**

(percent)



Source: Author's calculations based on data from Datastream.

German yields, although the greater relative vulnerability of France is not pursued in this paper.

**Cobbling Together a Response to the Sovereign Debt Crisis**

Greece was the first country to be shut out of the bond market in May 2010, with Ireland following in November 2010, and Portugal in April 2011. (In June 2012, Spain and Cyprus also sought official funding. At the time of writing, it is unclear whether Spain will require only a limited form of official funding to help it recapitalize its banking system or a larger-scale bailout.)

In each of the three bailouts, joint European Union/IMF programs were established under which three-year funding would be provided on condition that the recipient countries implemented fiscal austerity packages and structural reforms to boost growth (especially important in Greece and Portugal) and recapitalized and deleveraged overextended banking systems (especially important in Ireland). The scale of required funding far exceeded normal IMF lending levels, so the European

Union was the major provider of funding. At that time, it was also decided to set up a temporary European Financial Stability Facility that could issue bonds on the basis of guarantees from the member states in order to provide official funding in any future crises. In addition, the pre-existing European Stability Mechanism, which had previously only been used for balance-of-payments foreign currency support for non-euro member countries, was adapted to also provide funding for euro member countries.

In principle, a temporary period of official funding can benefit all parties. For the borrower, it can provide an opportunity for a government to take the typically unpopular measures necessary to put public finances on a trajectory that converges on a sustainable medium-term path, while also implementing structural reforms that can boost the level of potential output. For the lender, avoiding default can benefit their creditor institutions (especially banks), while guarding against possible negative international spillovers from a default.

The details of the funding plans for Greece, Ireland, and Portugal largely copied standard IMF practices, but they faced a number of potential problems. Here are six issues, in no particular order.

First, given the scale of macroeconomic, financial, and fiscal imbalances, the plausible time scale for macroeconomic adjustment was longer than the standard three-year term of such deals. In particular, fiscal austerity by individual member countries cannot be counterbalanced by a currency devaluation or an easing in monetary conditions, which is especially costly if a country has to simultaneously close both fiscal and external deficits. By June 2011, it was clear that Greece would need a second package, while it is also likely that Ireland and Portugal will not be able to obtain full market funding after the expiry of their current deals. The slow pace of adjustment was also recognized in Summer 2011 through the extension of the repayment period on the official debt from 7.5 years to 15–30 years.

Second, in related fashion, excessively rapid fiscal consolidation can exacerbate weaknesses in the banking system. Falling output and a rising tax burden shrinks household disposable income and corporate profits, increasing private sector default risk. This was identified as an especially strong risk in the Irish program in view of the scale of household debt.

Third, the fiscal targets were not conditional on the state of the wider European economy. As growth projections for the wider European economy declined throughout 2011, the country-specific targets looked unobtainable for external reasons.

Fourth, the original bailouts included a sizable penalty premium of 300 basis points built into the interest rate, which is standard IMF practice. A penalty rate discourages countries from the moral hazard of taking such loans when not really needed and also compensates the funders for the nontrivial default risk. However, it also makes repaying the loans harder and gives an appearance that the creditor EU countries are profiteering at the expense of the bailed-out countries. This penalty premium on the European component of the official loans was eliminated in July 2011, although the interest rate on the IMF-sourced component of the funds continued to include a penalty premium.

Fifth, the bailout funds have been used to recapitalize banking systems, in addition to covering the “regular” fiscal deficits. So far, this element has been most important in the Irish bailout, but it was also a feature of the Greek and Portuguese bailouts; it is also the primary element in the official funding requested by Spain in June 2012. While publicly funded recapitalization of troubled banks can ameliorate a banking crisis, this strategy is problematic if it raises public debt and sovereign risk to an excessive level (Acharya, Drechsler, and Schnabl 2010). Moreover, excessive levels of sovereign debt can amplify a banking crisis for several reasons: domestic banks typically hold domestic sovereign bonds; a sovereign debt crisis portends additional private sector loan losses for banks; and a highly indebted government is likely to lean on banks to provide additional funding (Reinhart and Sbrancia 2011). Furthermore, the generally poor health of major European banks and the cross-border nature of financial stability inside a monetary union means that national governments are under international pressure to rescue failing banks in order to avoid the cross-border contagion risks from imposing losses on bank creditors.<sup>3</sup> Despite these international externalities, at least until mid 2012, the only type of European funding for bank rescues was plain-vanilla official loans to the national sovereign, with fixed repayment terms. Under this approach, the fates of national sovereigns and national banking systems remain closely intertwined.

The sixth issue involves a standard IMF principle that funding is only provided if the sovereign debt level is considered to be sustainable. If it is not sustainable, the traditional IMF practice has been to require private sector creditors to agree to a reduction in the present value of the debt owed to them. Under the joint EU–IMF programs, such “private sector involvement” was not initially deemed necessary in the three bailouts of 2010 and 2011.

The argument against requiring private sector involvement is that it can spook an already nervous sovereign debt market. For example, when the prospect of requiring private sector involvement was broached in October 2010 (in the Franco-German “Deauville Declaration”), interest rate spreads immediately increased, especially for Greece, Ireland, and Portugal. Ireland’s efforts to avoid a bailout came to a halt soon thereafter in early November 2010. European banks also had increased difficulties in raising funds, especially the local banks in the troubled periphery, in line with the increase in the perceived riskiness of their home governments.

The March 2012 agreement to provide Greece with a second bailout package did require that private sector creditors accept a haircut, which eventually turned out to be about 50 percent of value, which is equal to 47 percent of Greek GDP.<sup>4</sup> But

<sup>3</sup> The poor design of European bank resolution regimes has also increased the fiscal cost of rescuing banks, since it is difficult to shut down failing banks and impose losses on holders of the senior bonds issued by banks.

<sup>4</sup> Although the plausibility of this projection has been disputed by many commentators, the second bailout package is officially projected to deliver a Greek debt/GDP ratio of 120 percent by 2020, which is a shade above the debt ratios of the some of the other troubled euro member countries. See also Ardagna and Caselli (2012) for an account of the Greek crisis.

as this requirement was discussed during the course of 2011, it contributed to the sharp widening of the spreads on Spanish and Italian debt.

Listing some of the difficulties in this way may make the European response to its sovereign debt issues appear more coherent than it has actually been. Instead, it may be fair to characterize Europe's efforts to address its sovereign debt problem as makeshift and chaotic, at least through the middle of 2012.

### **Risks of Multiple Equilibria when Sovereign Debt is High**

A significant factor during the crisis has been the increased volatility in euro area sovereign debt markets. A country with a high level of sovereign debt is vulnerable to increases in the interest rate it pays on its debt (Calvo 1988; Corsetti and Dedola 2011). This risk can give rise to self-fulfilling speculative attacks: an increase in perceptions of default risk induces investors to demand higher yields, which in turn makes default more likely. In contrast, if default risk is perceived to be low, interest rates remain low, and default does not occur. This multiple equilibria problem may have greater force in the context of a multicountry currency union, since a small adverse shift in the fundamentals of one individual country can trigger a large decline in demand for the sovereign debt of that country as investors "run for the exit" and switch to sovereign debt of other safer euro area countries.

What policies might encourage the "good" equilibrium? One option is to create a firewall through the availability of an official safety net. This would reduce the risk of the "bad" equilibrium arising because investors would not need to fear that a country will be pushed into involuntary default by an inability to rollover its debt. As of mid 2012, the available funding through the European Financial Stability Facility and its successor, the European Stability Mechanism, was only enough to address the bailouts of Greece, Ireland, and Portugal—and thus not nearly sufficient to offer substantial support to Spain and/or Italy. Proposals to create a large firewall fund are politically unpopular in creditor countries for many reasons, including fear of taking losses, and concerns that such a fund would tempt politicians in at-risk countries to postpone or avoid tough fiscal and structural reform decisions.

The European Central Bank's program to purchase sovereign bonds can also be viewed as a way to reduce the risk of the "bad" equilibrium. Between May 2010 and October 2010, about 65 billion euro of bonds were bought by the ECB; a further 125 billion euro were committed during the market turmoil between August 2011 and November 2011 such that the cumulative bond holdings grew to over 200 billion euros (about 2 percent of euro area GDP). The ECB has taken pains to emphasize that these purchases are not monetizing debt because liquidity created is canceled out through offsetting sterilization operations. Instead, the program seeks to provide liquidity and depth when certain sovereign debt markets are troubled. A useful analogy here is to the modern argument for currency market interventions. Such interventions do not try to fix asset values; instead, limited intervention by a central bank can be temporarily stabilizing by breaking momentum dynamics.

There have also been calls for the European Central Bank to take further steps to stabilize the sovereign debt market (for example, De Grauwe 2012). At

one level, it could increase the firepower of the European Stability Mechanism by allowing it to borrow from the ECB. Going further, the ECB could announce a ceiling to the interest rate it would tolerate on the sovereign debt of countries that meet certain fiscal criteria (such as taking credible steps to ensure debt declines to a safe level over the medium term), and guarantee to buy the debt at that price if needed.

Even more controversially, outright debt monetization might be viewed in some quarters as preferable to outright default by large member countries if it becomes clear that solvency concerns are so great that market funding will not be available for an extended period. While debt monetization exceeds the current legal mandate of the European Central Bank, debate over these proposals might heat up if a more acute and severe phase of the crisis were to take hold. At least for now, it is hard to envisage that such a change would be supported by all member countries of the euro area. However, it is also important to appreciate that the reserve capacity to monetize debt is commonly cited as the reason why highly indebted governments such as Japan, the United Kingdom, and the United States are still able to borrow at low interest rates.

## **Prospects for Post-Crisis Reduction in Sovereign Debt**

The legacy of the euro area sovereign debt crisis is that a number of countries will have dangerously elevated public debt ratios, while others will have debt levels that are lower by comparison but still high relative to long-term normal values. Even if current austerity programs are sufficient to stabilize debt ratios, there remains the post-crisis adjustment challenge of gradually reducing government debt to safer levels. This medium-term challenge is viewed with trepidation in European circles. Consider four reasons why the underlying fundamentals for reducing the debt/GDP ratio are not promising.

First, growth in nominal GDP is likely to be low. Debt/GDP ratios are stickier in high-income countries than in emerging economies in part because there is less scope for rapid output growth in the former group of countries. There is nothing to suggest that real growth rates for advanced economies should exceed a long-term annual average of about 2 percent. Indeed, real annual growth of 2 percent may be optimistic given several factors: the erosion of human capital from the prolonged unemployment of the last few years (DeLong and Summers 2012); the likelihood of tax increases and reduced public investment; and the historical pattern that output growth can be compromised for a decade in the aftermath of a banking crisis (Reinhart and Rogoff 2010). For the most-indebted countries, nominal GDP is unlikely to grow much faster than real GDP. The European Central Bank has a 2 percent aggregate inflation target (approximately), and the most indebted member countries are likely to have average inflation substantially below that level in view of the correlation between domestic demand and the price level of nontradables (Lane and Milesi-Ferretti 2004).

Second, the political economy environment is likely to be challenging. The highly indebted countries will need to be led by governments that must impose spending cuts and tax increases with no short-term prospect of fiscal relaxation. Adjustment fatigue can set in, making it difficult to sustain long-term fiscal austerity.

Third, the possibilities for financing at least some of the sovereign debt through “financial repression” are limited. This approach uses tight regulations on domestic financial institutions—including banks, pension funds, and others—so that these institutions are pressured to put a greater portion of their assets than they would otherwise choose into sovereign debt (Reinhart and Sbrancia 2011). However, the principle of open capital markets across the European Union means that countries have fairly limited scope for financial repression in comparison to what was historically possible.

Fourth, risk premia will likely remain nontrivial for most indebted member countries. The large losses experienced by private sector investors in Greek sovereign debt underline that the sovereign debt of euro area member countries can no longer be categorized as risk-free investments. Indeed, the historical evidence suggests that further rounds of debt restructuring will form part of the adjustment process (see also the discussion by Reinhart, Reinhart, and Rogoff in this issue).

Accordingly, the medium-term outlook suggests that sovereign debt is likely to pose significant policy challenges for the euro area over the next few years. The next section outlines some possible reforms that could help to alleviate the situation and avoid a similar disaster in the future.

## **Reforms to Address Sovereign Debt Concerns**

The high outstanding sovereign debt levels and the importance of avoiding future fiscal crises in the euro area have induced reforms to the fiscal rules for the euro area, with a new Fiscal Compact Treaty that is scheduled to go into effect at the start of 2013 (if it is ratified by 12 members of the euro area by then). The Fiscal Compact requires that the new fiscal principles be embedded in each country’s national legislation. These fiscal governance reforms are based on two principles: first, high public debt levels pose a threat to fiscal stability; and, second, the fiscal balance should be close to zero “over the cycle.”

The operation of the pre-crisis fiscal rules focused on the overall budget balance, with a maximum annual budget deficit set at 3 percent of GDP, while there was no strong pressure on highly indebted countries (such as Greece and Italy) to reduce debt levels below the specified 60 percent ceiling. Even on its own terms, this approach had two main defects: it did not adequately allow for cyclical variation in budget positions, and it did not provide much discipline for countries inside the limit.

In contrast, the new system focuses on the structural budget balance, thus stripping out cyclical effects and one-off items. A structural budget balance

target encourages a government to bank cyclical revenue gains during upturns in exchange for a greater slippage in the overall budget balance during recessions. Under the new system, there is a specified time frame for reducing public debt below the ceiling of 60 percent of GDP, with the excess above the ceiling eliminated at an average rate of “one twentieth” each year.

This new approach faces several implementation problems. For example, a fiscal framework based on structural budget balance faces knotty measurement problems because it requires macroeconomic forecasters to differentiate between cyclical fluctuations and trend fluctuations in output almost in real time. For this reason, the Fiscal Compact requires that governments enact a mechanism that requires adjustments if the forecast errors for the structural budget balance cumulate over several years to a significant level. In the German fiscal law, for example, a cumulative overshoot above 1.5 percent of GDP requires a gradual correction by running tighter structural budgets until the excess is eliminated (Bundesbank 2011).

Another potential issue is that, in contrast to the original Stability and Growth Pact, the primary source of fiscal discipline is intended to be national. The Fiscal Compact requires that the fiscal rules are written into domestic legislation and that national independent fiscal councils be created to monitor the compliance with the specified fiscal rules. The hope is that national-level discipline will be more effective, since it should have greater political legitimacy than external surveillance. However, external surveillance and the threat of external sanctions remain as a “second line of defense” against fiscal misbehavior.

In recognition that fiscal stability can be quickly undone by financial and macroeconomic shocks, the Fiscal Compact is accompanied by new European regulations that go beyond narrow fiscal governance in monitoring “excessive imbalances.” A wide range of risk indicators will be tracked, including credit growth, house price indices, and external imbalances. The intention is that a country experiencing severe imbalances should respond with policy interventions to mitigate crisis risks and improve resilience. However, it remains unclear whether national governments have the capacity to identify excessive imbalances accurately or to deploy policy instruments that can be effective in managing such risk factors.

Given the limited nature of these initiatives, more extensive reforms are also under discussion. A partial list of such proposals includes the following. First and foremost is the creation of a banking union, since the diabolic loop between national banking systems and national sovereigns has been central to the fiscal crisis. The ingredients of banking union are well-known and include European-level regulatory responsibility, deposit insurance, bank resolution policies, and a joint fiscal backstop in the event that fiscal resources were deemed necessary to stabilize the banking system (Allen, Beck, Carletti, Lane, Schoenmaker, and Wagner 2011; Brunnermeier et al. 2011; Marzinotto, Sapir, and Wolff 2011). A partial move in this direction was announced at the June 2012 European Council meeting, which also opened up the possibility of the European Stability Mechanism making direct equity injections into troubled banks. However, the details of these new plans have yet to be ironed out.

A second step is the introduction of common areawide “eurobonds,” with the goal of avoiding the disruptive impact of destabilizing speculative attacks on national sovereign debt markets inside the euro area (Favero and Missale 2012). Fiscally stronger member states might support eurobonds if it is cheaper than the alternatives for reducing default risk, for instance with bigger bailout funds. To prevent fiscally weaker member states from using eurobonds to overborrow, these could be restricted in various ways. One option is to limit eurobonds to short maturities, so that ill-disciplined countries could quickly be denied access to funding (Philippon and Hellwig 2011); another option is to limit eurobond funding only for sovereign debt up to 60 percent of GDP, with the excess still requiring funding through the issuance of national bonds (Delpla and Von Weizsäcker 2011); or eurobonds could be limited to countries that satisfy certain criteria for good macroeconomic and fiscal fundamentals (Muellbauer 2011).<sup>5</sup>

Alternatively, Brunnermeier et al. (2011) point out that many of the advantages of eurobonds can be obtained even if sovereign debt remains a national responsibility. In particular, a European Debt Agency could be established that would buy up large quantities of national sovereign bonds (up to a limit of 60 percent of GDP in each case). This agency would be funded by the issuance of two tranches of bonds—European Safe Bonds and European Junior Bonds—with the latter having the primary exposure in the event of defaults on the underlying portfolio of national sovereign bonds. Accordingly, the senior European Safe Bonds should be safe assets, which in turn should make them preferred collateral for central bank liquidity operations. Since this proposal does not require joint backing of sovereign debt issues, it avoids the moral hazard problems that plague the eurobond proposals.

Third, Europe might seek *a deeper level of fiscal union*, agreeing to share certain tax streams or spending programs in a way that would be delinked from fluctuations in national-level output. In related fashion, *enhanced coordination of national fiscal policies* would also be helpful, thereby enabling the collective fiscal position of the euro area to be appropriately calibrated in relation to the prevailing macroeconomic conditions.

Many of these policy proposals would require changes in the treaties governing the European Union and imply a transformative increase in the level of political integration. Paradoxically, the European crisis has generated severe political tensions across the member states, while at the same time prompting much discussion of the desirability of more extensive types of political union. In this debate, the parallels with the historical development of fiscal federalism in the United States have been well-flagged (Henning and Kessler 2012; Sargent 2012).

<sup>5</sup> A temporary type of eurobond has been suggested by the German Council of Economic Experts (Bofinger, Feld, Franz, Schmidt, and Weder di Mauro 2011). Under this proposal, a jointly-backed Debt Redemption Fund would refinance the excess debt above 60 percent of GDP, thereby relieving the roll-over pressures facing highly-indebted countries. Once debt levels fall back to the 60 percent ceiling, the Debt Redemption Fund would be wound up.



In conclusion, the origin and propagation of the European sovereign debt crisis can be attributed to the flawed original design of the euro. In particular, there was an incomplete understanding of the fragility of a monetary union under crisis conditions, especially in the absence of banking union and other European-level buffer mechanisms. Moreover, the inherent messiness involved in proposing and implementing incremental multicountry crisis management responses on the fly has been an important destabilizing factor throughout the crisis.

The most benign perspective on the European sovereign debt crisis is that it provides an opportunity to implement reforms that are necessary for a stable monetary union but that would not have been politically feasible in its absence. A more modest hope is that the unfolding reform process will deliver a monetary union that can survive, even if it remains vulnerable to recurring crises. However, the alternative scenario in which the single European currency implodes is no longer unthinkable, even if it would unleash the “mother of all financial crises” (Eichengreen 2010). The stakes are high.

■ *I thank Michael Curran, Michael O’Grady, and Clemens Struck for diligent research assistance. I am grateful to my fellow members of the euro-nomics group for many insightful discussions of the euro crisis and Claudio Borio, Giancarlo Corsetti, Jordi Gali, Paolo Mauro, Ashoka Mody, Maury Obstfeld, and the JEP editors for helpful suggestions.*

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