8

The Other Crisis: Sovereign Distress in the Euro Area

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8.1 Introduction

The sovereign crisis that has engulfed the euro area (EA) since 2009 was largely unexpected. In early fall 2008, before the collapse of Lehman triggered what is now known as the Great Recession, the EA appeared to be in a relatively sheltered position. The area's macroeconomic indicators were faring well compared to those of other advanced economies. Its banks looked relatively less exposed to the worst effects of the subprime or other toxic assets. And an institutional framework was in place to facilitate cross-border policy coordination. However, once Greece, a member with a relatively small economic weight in the EA, began to face financing difficulties in late 2009/early 2010, a sovereign debt crisis erupted, and since then the EA has struggled with financial pressures and confidence loss.

This chapter tries to identify the causes of this unexpected turn of event, the obstacles that have hampered a quicker resolution of the crisis, and the way forward. Its main findings are these:

- The seeds of the sovereign debt crisis in the EA were planted well ahead of the Great Recession. Partly as the result of institutional gaps, intra-EA imbalances deepened and vulnerabilities built up in the first decade of the euro, even if they were not fully recognized until the crisis broke. The Great Recession did not generate these imbalances and vulnerabilities, but it amplified them and brought them sharply to the fore.
- Difficulties in elaborating a regional response to the crisis undermined confidence in the EA as a policy entity. Early actions were mostly a collection of national plans, weakening their impact while fueling doubts about the credibility of the EA.
- Crisis management processes had not been envisaged in the design of institutional arrangements for the eurozone. Against the background of a global financial crisis and nervous markets, the absence of a lender of last resort

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sharply aggravated fiscal distress in some EA members, fueled contagion, and raised serious concerns about the viability of the currency union.

- The policy response initially focused on the fiscal front and, to some degree, neglected weaknesses in the banking sector and growth-supporting structural reforms, encouraging the development of negative feedback loops between fiscal consolidation, banks' balance sheets, and growth.

More specifically regarding fiscal policy, three lessons can be drawn:

- The institutional design of the EA, an incomplete monetary union, puts an inordinate share of the adjustment burden on national fiscal policies. With rapid financial integration, however, fiscal levers proved insufficient to prevent or reverse the emergence of intra-EA imbalances. The announcement in the summer of 2012 by the European Central Bank (ECB) of its readiness to provide the financing needed to prevent undue sovereign debt distress was a major step in alleviating market pressures. Although the elaboration of EA-wide banking and financial supervision policies should further even out the adjustment burden going forward, it remains to be seen whether the currency union will be able to prosper without more elaborate common risk-sharing or stabilization instruments.
- In an environment of high uncertainty, the adoption of nominal (non-cyclically adjusted) targets has tended to give fiscal policy a procyclical bent. The move to structural targets should leave space for countries to navigate unexpected surprises, but it raises nontrivial technical and communicational issues.
- With financial globalization, the two-way links between a sovereign and the domestic banks have become tighter and can quickly unleash hard-to-control negative feedback loops. This was particularly evident in the EA setting, but also resonates for countries outside the EA with large banking systems, such as the United Kingdom. Large, internationally active banks can potentially generate large contingent liabilities for a sovereign. In addition to strengthened regulation, including in the macroprudential area, these countries have strong incentives to build larger fiscal buffers in quiet times, in order to increase their response capacity in case of a crisis.

After a period of trials and errors, important steps have been taken to restore confidence in the capacity of the EA to overcome this crisis, but further efforts are needed to strengthen its ability to define and implement economic policies with a truly regional dimension. As long as the union remains incomplete, the design of fiscal policy in member states will remain a particular challenge.

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8.2 Before the Fall: Fiscal Policy and the Buildup of Intra-Euro Area Vulnerabilities

Up to 2009, few would have seen the EA as a stage for fiscal drama. Its average overall fiscal deficit between 1999 and 2007, around 2 percent of GDP, was lower than in Japan or the United States. At end-2007, the gross government debt-to-GDP ratio was also lower than in these two countries (figure 8.1). Other indicators similarly pointed to a reasonably well-behaved fiscal position for the EA as a whole. For example, primary expenditure as a percentage of GDP was lower in 2007 than in 1999, and the fiscal stance did not seem to be particularly procyclical in good times (figure 8.2).

8.2.1 Growing Fiscal Gaps

However, this relatively good aggregate outturn masked significant heterogeneity among EA countries. A number of them had chronically large deficits both in headline and cyclically adjusted terms. For instance, the general government deficit of Greece and Portugal exceeded the Maastricht ceiling every year during 1999 to 2007. The largest EA countries did not perform much better, with Italy exceeding the ceiling six times, Germany five times, and France three times. But Finland, Ireland, Luxembourg, and Spain achieved sustained fiscal surpluses.

Fiscal heterogeneity continued to be an issue on the eve of the Great Recession (figures 8.3 and 8.4). In 2007, six EA members still had large deficits, while eight EA members registered fiscal surpluses, some of which resulted from strong consolidation efforts. In particular, Germany's general government balance had swung into surplus as fiscal tightening efforts begun several years earlier paid off. But consolidation in other deficit countries was much less advanced or had not yet been initiated. The gap in fiscal performances within the EA in 2007 is well illustrated by the distance between Finland's 5.3 percent surplus and Greece's 6.5 percent deficit, measured as a share of GDP and in headline terms.

The heterogeneity of fiscal balances largely reflects strong expenditure growth in many EA countries.[1] Expenditure growth was particularly fast in countries that later faced a sovereign debt crisis. For instance, over 1999 to 2007, primary expenditures as a share of GDP rose by 2.8 percentage points in Portugal, 4.1 percentage points in Ireland, and 5.5 percentage points in Greece. In real terms and corrected for cyclical factors, primary expenditures in Ireland almost doubled in this period. In these three countries, the increase in expenditures was heavily skewed toward transfers (IMF 2008; Lemgruber and Soto 2013; Abbas 2012). The share of the government wage bill expanded too, further increasing spending rigidity. Primary expenditures as a share of GDP also rose by more than 1 percentage point in Italy and by around 1 percentage point in Belgium and the Netherlands during this period as room from falling interest payments was used to increase other spending.

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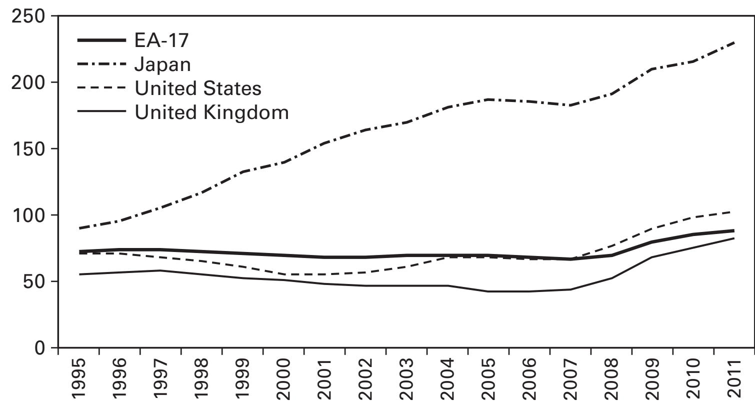

Figure 8.1a
Advanced economies' key fiscal indicators, 1995 to 2011; general government gross debt (percent of GDP)
Sources: AMECO Database; IMF Historical Public Debt Database; World Economic Outlook (WEO) Database

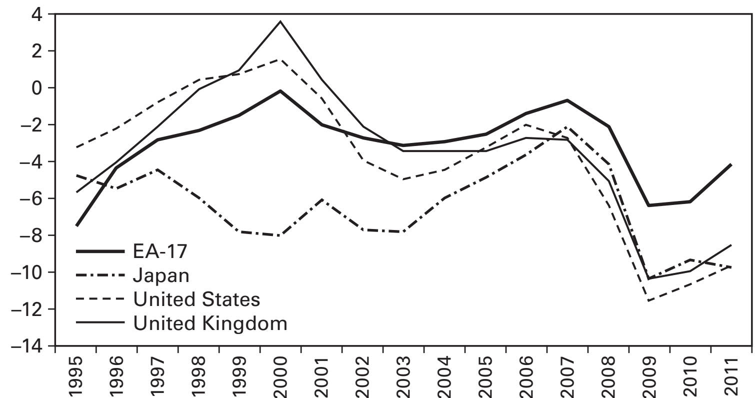

Figure 8.1b
Advanced economies' key fiscal indicators, 1995 to 2011; general government overall balance (percent of GDP)
Sources: AMECO Database; IMF Historical Public Debt Database; World Economic Outlook (WEO) Database

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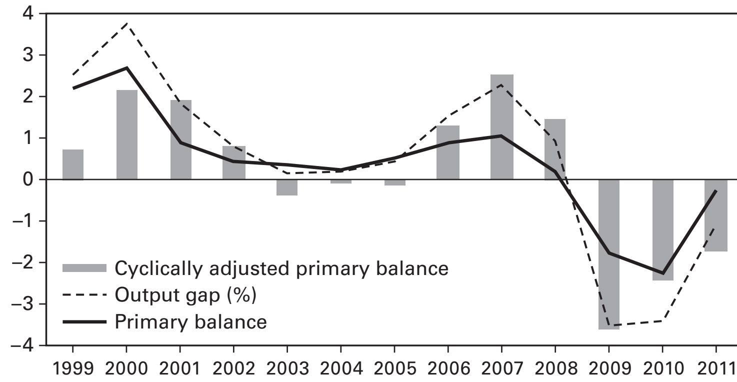

Figure 8.2
Fiscal position and the output gap in the euro area-17, 1999 to 2011
Source: AMECO Database

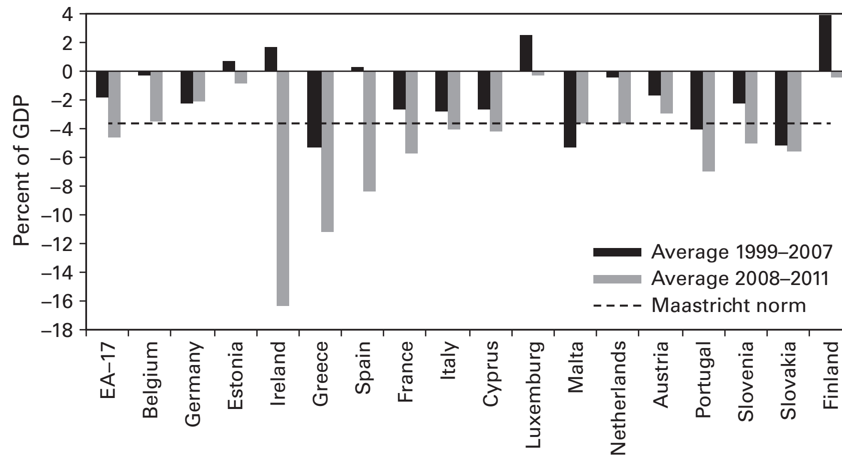

Figure 8.3
General government overall balance, euro area-17, 1999 to 2011 (percent of GDP)
Source: AMECO Database

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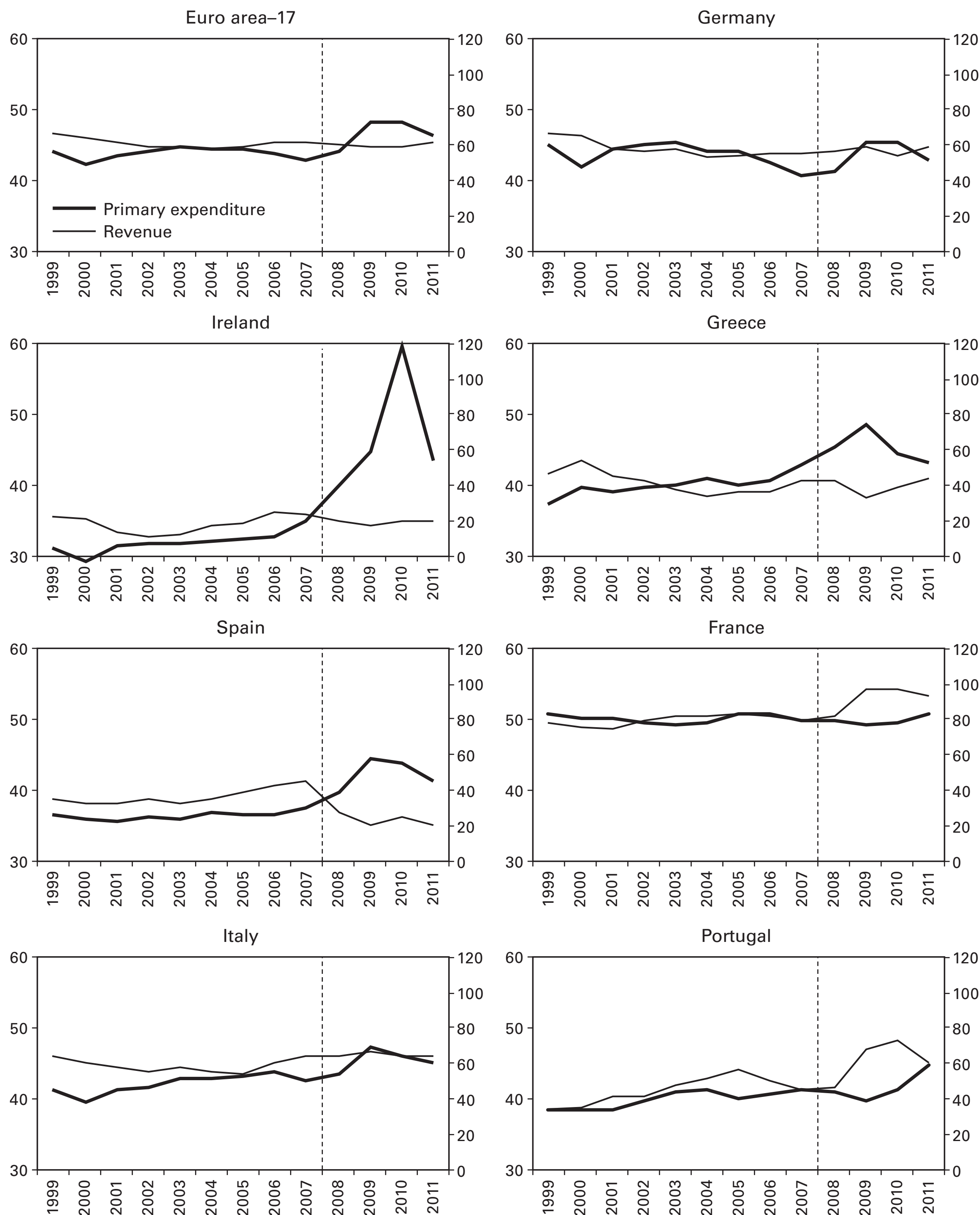

Figure 8.4
Euro area's expenditures and revenue as share of GDP, 1999 to 2011
Source: AMECO Database

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As many countries reduced tax rates or narrowed their tax base through tax exemptions, revenue growth, in turn, was lagging or ephemeral. In the EA as a whole, the revenue-to-GDP ratio dropped by around 1.25 percentage points during 1999 to 2007, reflecting a decline in Germany, in particular, but also in Belgium and the Netherlands. Among the chronic excessive deficit countries, revenue in Greece, as a percentage of GDP, was around 2 percentage points lower in 2007 than at the time of euro introduction. Portugal managed to increase its revenue in tandem with its primary expenditures, but not by enough to achieve a primary surplus. In Ireland and Spain, a large share of the seemingly strong revenue growth was due to credit and real estate booms, making public finances vulnerable to a downturn.[2] Already in 2007 there were warnings that as much as three-quarters of Spain's increase in government revenue would disappear when the real estate boom came to an end (Martinez-Mongay et al. 2007).

With hindsight, in a number of EA countries government balances adjusted for the cycle and corrected for asset price effects were weaker than originally thought during most of 1999 to 2008, thus unknowingly permitting a loosening of the fiscal stance. However, capturing asset price effects in real time raises a number of methodological challenges that are not yet fully addressed—and even less so before the crisis. Furthermore, balances adjusted for asset price effects using ex post data and recently improved methodologies continue to show strong heterogeneity in fiscal outcomes within the EA.[3]

Differences in the debt position at the time of euro adoption, divergent fiscal balances, and different growth and interest-rate conditions all contributed to substantial heterogeneity of debt ratios. Greece, but also Belgium and Italy, entered the EA with general government debt above 100 percent of GDP, substantially more than the Maastricht ceiling and more than double Finland's and Ireland's debt ratios at the same point in time. Following euro adoption, the debt ratio further increased in Greece, as the country failed to maintain primary surpluses and had to take on hidden liabilities, and also in Portugal, where primary balances remained in deficit. Belgium and Italy, on the other hand, made further progress toward debt reduction through a primary surplus policy. Interest-rate–growth differentials also mattered. They contributed importantly to the reduction of the debt ratio in Ireland and Spain during 1999 to 2007, but also explain in part why the ratio went up in the two largest EA countries, France and Germany, in this period.

The large and continued policy divergence was possible in part because of important flaws in the EA fiscal surveillance framework.

- *Weaknesses in design.* The Stability and Growth Pact (SGP) rules were fundamentally asymmetric, with alarm bells and sanctions if countries breached the ceilings, but no incentives for building fiscal buffers in good times (see ECB

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2011; Larch et al. 2010). With minimal buffers, even a mild slowdown (as in 2002 to 2003) was sufficient to activate the Excessive Deficit Procedure (EDP) for a number of EA members.

- *Weaknesses in enforcement*. The SGP could not effectively enforce fiscal discipline. Germany and France, by ignoring the fiscal adjustment requirements of the EDP rules in 2002 to 2003, undermined the SGP's credibility. The 2005 reform of the SGP increased policy flexibility, but without introducing stronger enforcement mechanisms. Compliance was further hampered by the complexity of the ESA 95 rules for reporting of general government balances[4] coupled, in the case of Greece, with outright misreporting.

In the defense of EA authorities, measuring output gaps and one-off revenue effects at a time of large cyclical upswings and asset bubbles was also methodologically challenging. Up until the end of 2008, the European Commission's (EC) earlier estimates of cyclically adjusted balances were systematically revised upward for the EA as a whole, as well as for all individual countries.

Also, contrary to the expectations embedded in the EMU's design, market discipline was ineffective in controlling fiscal policies. Because the European monetary union was born as a compromise, with limited centralization of functions beyond the monetary authority, market forces were expected to complement institutional arrangements in ensuring fiscal discipline. Explicit provisions in the Treaty on the Functioning of the European Union (TFEU) sought to limit moral hazard by prohibiting the monetary financing of public debt (Article 123[5]), while the no bailout clause (Article 125[6]) specifically stated that a member facing financial difficulties should not expect assistance from the Union or other member states. Both provisions provided an unambiguous signal that the ECB would not step in to alleviate budget distress and gave markets the responsibility to price in the risk of sovereign default. In practice, however, sovereign borrowing costs converged rapidly after the adoption of the euro, with spreads over Germany (considered the benchmark) shrinking to negligible levels for all EA members.

This in large part reflected investors' expectations that a sovereign default in the EA would be too costly not to trigger some form of support, either from the ECB or from other members. The absence of predefined bankruptcy or restructuring arrangements for sovereigns also left a degree of ambiguity regarding the actual application of the no bailout clause. Bank accounting practices reinforced the perception that sovereign default was not an option in the EA, as both bank regulators and the ECB, in their collateral policy, considered all government bonds risk-free (Buiter and Sibert 2005). Government debt managers adjusted their issuance strategies and risk management practices to the new low-spread regime, leaving the sovereign vulnerable to rollover and re-pricing risks if market expectations of official support to EA members in distress were not to be met and spread compression was undone.

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8.2.2 Widening Nonfiscal Gaps

Imbalances also built up in nonfiscal areas after the introduction of the common currency. Nominal interest rates converged quickly, well before inflation rates. The resulting negative real interest rates in higher inflation countries fueled internal demand and credit booms, as well as an unprecedented increase in private debt in some countries (Ireland, Spain) and in public debt in some others (Greece, Portugal). The fast expansion in bank balance sheets—in some countries, such as Ireland, banks' assets grew up to five times of GDP—was matched by a parallel increase in cross-border banking investment. Some countries (Greece, Portugal, Spain) already had large external imbalances at the time of euro introduction, and reported a further widening after the launch of the common currency (figure 8.5). These countries entered the EA with relatively weak external competitiveness indicators, which continued to deteriorate subsequently.

In contrast with the fiscal area, EA-wide rules and incentives to monitor and correct nonfiscal adverse dynamics were very much lacking. By design, the EA policy framework was intended to control public sector imbalances, under the assumption that market forces would be sufficient to correct any excess in private demand before it would reach destabilizing levels. As a result limiting or curbing the emerging imbalances in private sector balance sheets was not seen as a central or urgent policy goal. The Lisbon Strategy, set up in 2000, did seek to foster structural convergence, but it largely relied on market and peer pressure to encourage the implementation of structural reforms. In practice, reforms were implemented, at best, in a piecemeal manner. Progress remained uneven across areas, with key labor market reforms

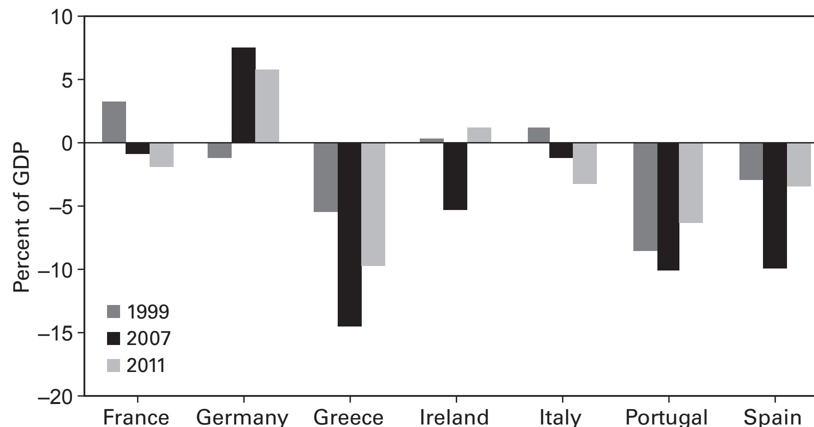

Figure 8.5
Current account balance developments in selected euro area countries
Source: World Economic Outlook (WEO) Database

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particularly lacking. The growth performance in countries with a weak structural reform record was overall disappointing.

Most important, banking supervision and regulation remained under the national umbrella. Notwithstanding the quick integration of financial systems across the euro area, member states remained individually responsible for deposit insurance schemes and the fiscal costs of domestic bank resolution, which exposed them to substantial contingent risks.

Further tightening this adverse bank–sovereign loop, the share of own-government bonds in bank holdings remained relatively high. In some EA countries, banks have historically been important holders of domestic government debt (figure 8.6). In Belgium, for example, the share of own-government debt held by banks at the time of

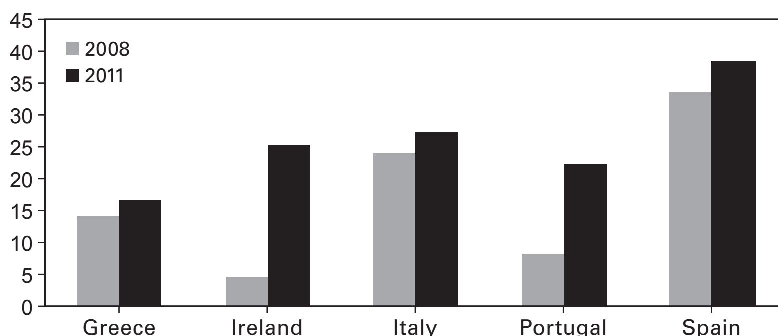

Figure 8.6a
Public debt held by domestic banks (percent of total public debt)
Source: Arslanap and Tsuda (2012)

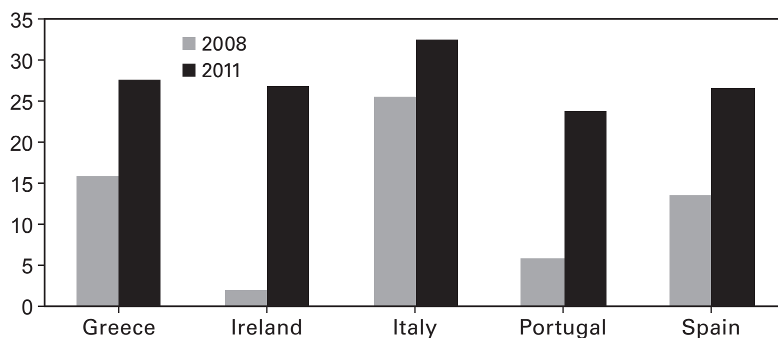

Figure 8.6b
Public debt held by domestic banks (in percent of GDP)
Source: Arslanap and Tsuda (2012)

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euro introduction was as high as 40 percent. As the EMU spurred the integration of previously segmented national sovereign debt markets, the share of own-government bonds in bank holdings generally declined, but by less than what effective risk-sharing would have suggested. Banks with a relatively high share of own-government securities in their portfolios were exposed to important market value losses if sovereign yields were to come under pressure. In turn, EA countries with relatively high own public debt held by banks were exposed to banking sector distress.

In all, initial expectations that the combination of a EA institutional framework, which was kept to a minimum, and the free play of corrective market forces would be powerful drivers of economic and policy convergence and business-cycle harmonization did not materialize. Rather, large imbalances emerged in public sector as well as private sector balance sheets. Abundant financing and market exuberance in the pre-Lehman era papered over these cracks, giving policy makers the confidence that the EA framework was sufficiently strong to ensure the viability of the union.

8.3 In the Lion's Den: Fiscal Policy in the First Phase of the Crisis

The Great Recession came to the EA somewhat later and initially less severely than to the United Kingdom and the United States. The EA did not immediately face strong headwinds when the first signs of pressures in international financial markets emerged in August 2007, in part because EA financial institutions were overall less directly exposed to toxic financial products. Recession struck the United States already in the first quarter of 2008, with the United Kingdom following in the second quarter, but the EA only entered it in the third quarter. The fall of Lehman Brothers in September 2008 shook international financial markets profoundly, and this time the EA was not immune. Interbank markets froze and some major European banks lost access to funding. In the wake of the global financial turmoil in the fourth quarter of 2008, the United Kingdom, the United States and all EA countries experienced a very deep recession in 2009, with broadly similar output contractions (figure 8.7).

Deeper cracks became apparent within the euro area shortly after the Lehman event. First, the recession in Ireland took a somewhat different shape than in the rest of the EA. Because of its strong trading links with the United States and the United Kingdom, Ireland entered the recession in early 2008, earlier than the rest of the EA. Moreover, the external shock served as the detonator of a severe banking crisis. Largely because of an abundance of low-cost foreign funding combined with lax domestic oversight, Irish banks became overextended and overexposed to domestic residential and commercial real estate. The banking system collapsed under the combination of sharply increasing funding costs and falling asset prices (by end-2009, house prices had declined by 21 percent), pushing the country into a deep recession (real GDP contracted by 8 percent over 2008 to 2010).

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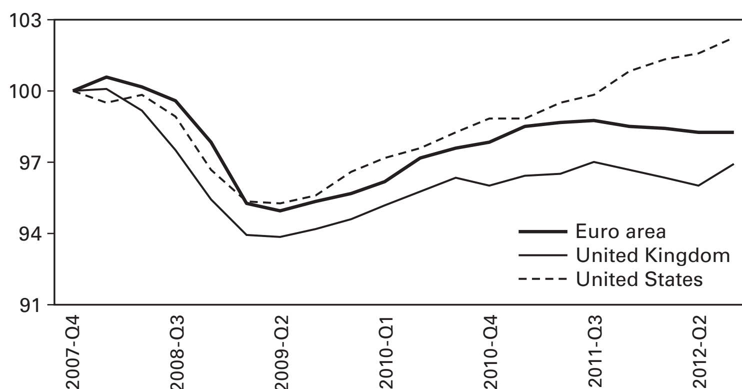

Figure 8.7
Level of real GDP (seasonally adjusted, 2007-Q4 = 100)
Source: Eurostat

Second, financial markets began to differentiate among EA members. Although the initial post-Lehman "flight to safety" pushed all EA nominal bond yields down, there was a significant contemporaneous widening in both bond spreads over Germany and CDS spreads in fall 2008. By early 2009, a 250 basis point spread over Germany had emerged for both Greece and Ireland, reflecting growing market concerns about the soundness of both countries' fiscal accounts.

Markets also began to internalize the transfer of risk from banks' to sovereigns' balance sheets, as evidenced by the falling CDS spreads for the banks and rising CDS spreads for sovereigns in late 2008, following the announcement by the ECB of important banking support measures. The opposite movement of bank and sovereign spreads came to an end in 2009, as rising sovereign spreads began to be transmitted to bank spreads, while news about financial sector stress continued to push up sovereign spreads (Mody and Sandri 2011).

Conversely, persistent imbalances appeared in Target 2, the euro area large-value cross-border payment and settlement system, as banks from EA countries that were not under pressure (mostly German banks) began to liquidate their claims, including interbank claims, in EA countries under pressure. Nonetheless, the imbalances remained relatively small (€100 to 200 billion) through 2008 to 2009. There were no indications yet that these tensions would intensify and culminate in a collapse in investor confidence and major sell-off in peripheral countries' sovereign debt markets.

8.3.1 Policy Response to Financial Shock

Understandably, the immediate policy focus in the aftermath of the financial shock was on avoiding a financial sector meltdown. The response of the ECB, the European Commission and national authorities was swift. The ECB slashed policy rates

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and eased liquidity. The fiscal authorities were equally quick in providing support to the financial sector, including guarantees and capital injections. In fall 2008, 11 EA countries, including all the larger ones, announced bank support schemes to reassure markets about the solvency of their banking systems.

The size (and composition) of the ECB's balance sheet expansion was much less ambitious than that witnessed contemporaneously in the United States and the United Kingdom, in part reflecting the limits set to the ECB's capacity to intervene in sovereign debt markets. For the EA as a whole, the cost of financial sector support in that first phase was relatively limited, although its nature, scale and impact varied considerably across countries. A clear outlier was Ireland, where the introduction of a blanket guarantee on large bank liabilities implied massive on- and off-balance sheet exposure for the sovereign. In other countries, financial sector support programs only led to a marginal widening of general government deficits (by less than half a percentage point of GDP). The increase in related contingent liabilities was also contained; it remained below 10 percent of GDP in all EA members except Ireland, Belgium, and the Netherlands—well below the impact observed in the United Kingdom (figures 8.8 and 8.9). From that view point, EA policy makers could thus conclude that, except for a few country-specific problems, the eurozone as a whole was relatively sheltered from the worst effects of the financial crisis.

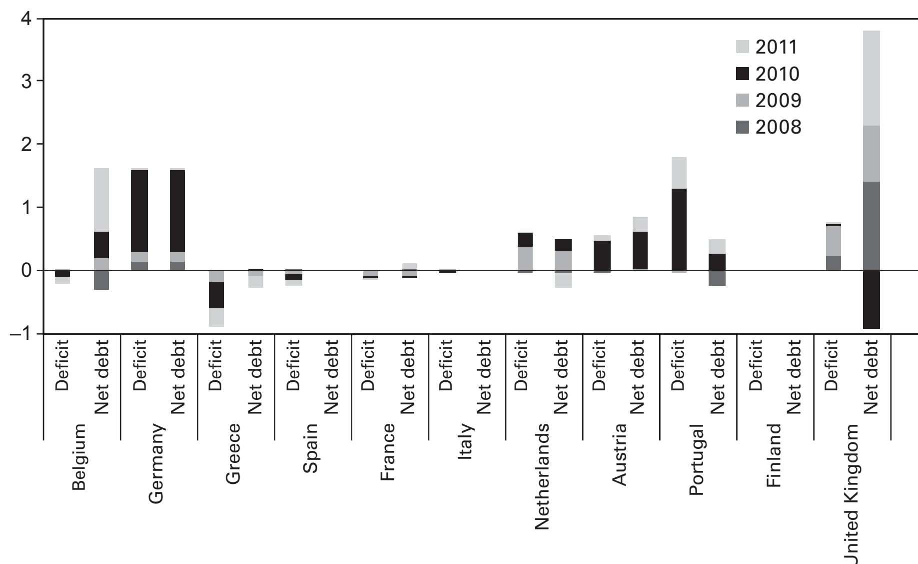

Figure 8.8
Impacts of financial sector support on general government deficit and net debt in euro area-11 and the United Kingdom (percent of GDP)
Source: Eurostat

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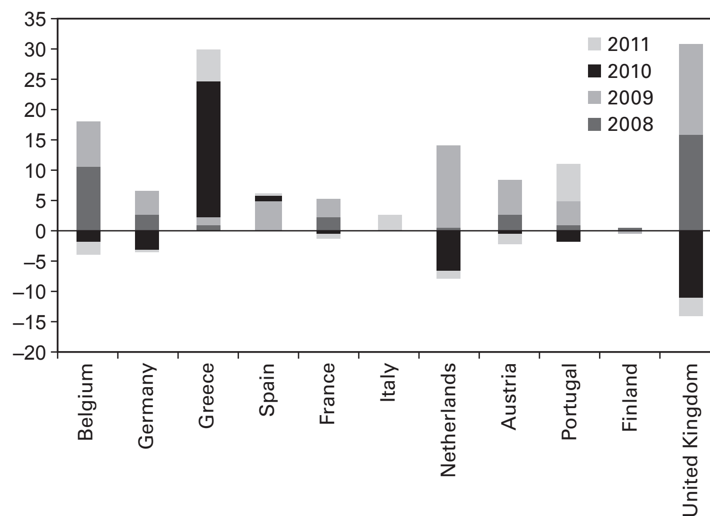

Figure 8.9
Contingent liabilities arising from financial sector support in euro area-11 and the United Kingdom (percent of GDP)
Source: Eurostat

8.3.2 Fiscal Policy: from Stimulus to Consolidation

The economic slowdown in the fourth quarter of 2008 prompted calls for a coordinated, timely, targeted, and temporary countercyclical fiscal expansion in advanced economies. The November 2008 European Economic Recovery Plan provided for an EU-wide stimulus of €200 billion, or 1.5 percent of EU GDP, one-fifth of which would be contributed by the European Investment Bank and the remaining four-fifth by national governments. However, the depth of the 2009 recession and its impact on the fiscal position were initially very much underestimated. For instance, the EC in fall 2008 projected still some positive growth for 2009, whereas the actual outturn was –4.5 percent. Then, as signs emerged in early 2010 that global growth was rebounding faster than initially expected, the focus of concerns shifted to the state of public finances. Between 2007 and 2009, government balances deteriorated by almost 8 percentage points of GDP and debt ratios jumped by almost 14 percentage points of GDP in the EA as a whole, significantly more than expected. The EC emphasized the need for timely exit from excessive deficits and, in high-debt countries, for steady debt reduction through ambitious consolidation in line with SGP targets. The policy stance thus moved relatively quickly, for the whole of the EA, to fiscal consolidation. In most cases planned stimulus plans were not implemented in full (table 8.1).

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Table 8.1
Discretionary fiscal response to the 2008 to 2009 financial crisis in the euro area, the United Kingdom, and the United States

	Announced stimulus[a]	Cumulative growth decline in 2009–2010[b]		Sovereign bond yield[c]	Initial and projected government debt[d]			Projected government deficit (average over 2008–10)	
	2008–10	Projected	Actual	Sep'08-Apr'09	End-2008 level (actual)	2008–10 buildup (projected)	2008–10 buildup (actual)	Projected	Actual[e]
Belgium	0.8	3.7	0.4	4.2	90	11	6	3.9	3.5
Spain	4.8	4.2	4.2	4.1	40	27	21	7.4	8.4
Ireland	0	11.4	6.5	4.8	44	39	48	11.6	17.4
Italy	0	4.3	4.0	4.5	106	11	13	4.0	4.1
Netherlands	1.9	3.9	2.2	3.9	58	7	5	2.8	3.4
Germany	3.3	5.1	1.2	3.4	66	11	16	3.3	2.4
Finland	3.4	4.5	6.0	3.8	34	13	15	-0.2	0.4
France	1.1	3.2	1.6	3.8	67	15	14	5.7	6.0
Austria	3.6	4.1	1.9	4.1	63	1	8	3.3	3.2
Portugal	1.0	4.5	1.6	4.4	66	18	22	5.3	7.9
Greece	0	0.8	8.2	5.3	99	26	35	5.3	12.1
EA-11 average[f]	2.1	4.3	2.6	4.0	70	15	16	4.6	5.0
United Kingdom	1.5	3.7	2.3	3.8	52	28	27	6.5	8.9
United States	4.9	2.8	0.8	3.0	71	27	23	9.1	9.9

a. Cumulative impact of discretionary stimulus measures (in percent of GDP), as reported in the Spring 2010 *Fiscal Monitor*.
b. Projections and actuals are as per the EC spring 2009 and autumn 2012 forecasts (in percent).
c. Ten-year sovereign bond yield (in percent).
d. Projections and actuals are as per the EC spring 2009 and autumn 2012 forecasts (in percent of GDP).
e. Excludes bank support costs of 1.3, 1.3, and 20.2 percent of GDP in 2010 for Germany, Portugal, and Ireland.
f. PPPGDP weighted.

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In the event, the size of the stimulus in this period varied considerably across the EA, but it was not a contributing factor to the subsequent sovereign debt crisis. Sovereigns facing widening spreads (Italy, Greece, and Ireland) did not implement a stimulus in 2009 and 2010 but rather focused on its opposite, fiscal tightening. In the rest of the EA, the stimulus was relatively small: about 2.1 percent of GDP for the larger EA countries as a whole, comparable to the United Kingdom, but less than half the size of the US stimulus, despite the fact that growth forecasts at the time of the announcement/finalization of these stimulus packages showed a steeper decline in GDP growth in the EA than in the United States (where growth had already suffered more in 2008). The stimulus package was particularly modest taking into account that monetary conditions were tighter in the EA than in the United Kingdom or the United States—in part reflecting the institutional constraints on the ECB's interest-rate policy and financial sector support measures.

The high degree of uncertainty, particularly about the growth outlook, weighed on the design of fiscal policy. With rapidly changing estimates of the output gap, implementation lags weakened the initial impact of stimulus measures. The EC's focus on using nominal deficit and debt ceilings as fiscal anchors undercut the mitigating role of automatic stabilizers.[7] A few EA members faced additional fiscal pressures to adjust to widening sovereign spreads.

8.3.3 Fragmented, Continually Narrow Policy Focus

The EA policy response in the first phase of the crisis already exhibited some limiting features that would continue to haunt it and hamper the resolution of the subsequent sovereign crisis. First, with the exception of initial liquidity provision to banks by the ECB, policies were designed mainly from a national perspective, and only loosely coordinated at the euro level. Partly because of the absence of established euro-wide policy levers, efforts to mitigate the impact of the external shock on European banks were more a juxtaposition of individual national actions than a well-articulated EA-wide response. Similarly, even though cross-border activities raised significant risks of intra-euro area spillovers, the Irish authorities were left to bear alone the largest share of the costs of the banking crisis. The reliance on national responses in the face of such a systemic event may have begun to undermine confidence in the EA as a policy entity. Even more, the insistence on the strict separation between monetary and fiscal management and the prohibition on the ECB from providing any support to an EA sovereign, even as markets turned jittery, may have planted the doubts that would later come to question the sustainability of the monetary union itself.

Also the policy stance at the EA level remained narrowly focused on fiscal adjustment, leaving other imbalances and their institutional roots somewhat aside. In particular, the absence of euro-wide regulatory and supervisory arrangements for the banking sector was not initially perceived as an urgent problem. Similarly

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structural reforms, notably those aimed at fostering a change in relative intra-EA prices, were often put on a back burner. Overall, the onset of the Great Recession did not prompt a reconsideration of the underlying EA policy framework. As a result intra-EA private sector imbalances were not yet a major policy concern. The current account deficits in the countries under pressure did narrow somewhat, but more as the result of the higher borrowing costs and demand compression than of a structural shift. On reflection, the adjustment appears asymmetric, as it was largely limited to the countries with deficits, while the surpluses in other EA members did not come down.

8.4 In the Eye of the Storm: Sovereign Debt Crisis

Triggered by a loss of investor confidence in Greece and the ensuing emergence of serious fiscal vulnerabilities in other euro members, a sovereign debt crisis engulfed the EA in 2010. The crisis spread across EA countries in successive, widening waves (see detailed timeline in appendix A at the end of this chapter).

- The EA sovereign debt crisis is generally considered to have originated with the loss of investor confidence following the substantial upward revision of Greek deficit and debt figures in late 2009. Concerns about the large cross-country exposure of EA banks to sovereign risk, public discord among EA leaders on how to respond to increasing financial pressures on Greece, and the possibility, muted by some policy makers, of a Greek debt restructuring further weakened confidence. Initial signs of contagion to Ireland and Portugal emerged in spring 2010, and EA leaders for the first time discussed the possible need for new mechanisms to support sovereigns facing rising and potentially unsustainable borrowing costs.
- The crisis entered a new phase with the May 2010 agreement on an adjustment program and financial assistance for Greece, and the announcement of new EU support mechanisms, most notably the European Financial Stability Facility (EFSF).[8] The ECB launched a Securities Markets Program (SMP) to purchase government bonds in the secondary market with the aim of restoring the proper functioning of dysfunctional market segments and the monetary policy transmission mechanism. But discord on how to activate the new mechanisms, questions about the commitment of EA leaders to a durable resolution of the crisis, and renewed discussion of a possible private creditor bail-in for Greece resulted in a quick return of severe market pressures. Ireland and Portugal were particularly affected this time and also had to seek international financial assistance. Sharply widening sovereign spreads further exacerbated the negative feedback loop between sovereign risk and bank risk in a number of EA countries.

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- The focal point of the EA sovereign debt crisis returned to Greece in the second half of 2011 as the country was unable to meet reform and fiscal consolidation commitments and output contracted much faster than forecast. The announcement that a restructuring of private sector holdings of Greek public debt would be part of a second program and disagreements among EA leaders on the scope of the restructuring dealt a new blow to already very low investor confidence. Contagion affected Italy and Spain. It was further fueled by these countries' deteriorating growth prospects and the realization that the SMP was too small and its conditions too restrictive to stabilize their sovereign bond markets. The ECB responded by cutting interest rates and putting in place a €1 trillion long term liquidity facility for banks (the long-term refinancing operation, or LTRO), which established an effective lender-of-last resort function for banks; it also aimed, indirectly, at improving the liquidity of sovereign debt markets.
- By mid-2012, concerns regarding the capacity of the Spanish authorities to support ailing banks pushed spreads to new record levels and triggered new waves of contagion. Investor confidence was undermined by the perception that EA sovereigns would remain vulnerable to self-fulfilling debt runs and contagion as long as a lender of last resort function for sovereign debt was not put in place.[9] In response, decisive reforms were introduced that addressed the institutional weaknesses at the core of the crisis and considerably improved investor sentiment toward the EA as a whole. Most important, the ECB announced in July that it saw the euro project as irreversible and that it stood ready to do "whatever it takes" to preserve the monetary union. In September, it announced the replacement of the SMP with the Outright Monetary Transactions (OMT) facility, which could be used to intervene, in potentially unlimited amounts and for as long as necessary, to stabilize secondary sovereign debt markets.

Beyond crisis management, other important reforms were adopted in the banking and fiscal areas. Proposed banking reforms included a framework for sharing the burden of bank recapitalizations, the creation of a single bank supervisory mechanism in the hands of the ECB, and the agreement to establish a Banking Union. Fiscal reforms, under the so-called Fiscal Compact, included three key elements that in combination should facilitate the convergence of fiscal policy over the medium term: the use of a structural budget target, which combines the sustainability goal with room for adjustment to the economic cycle; the intent to anchor firmly fiscal governance at the national level, through the inclusion of the structural target in national legislation; and the strengthening of supranational oversight (box 8.1). Both the Banking Union and the Fiscal Compact are meaningful structural decisions that give the EMU institutional framework a noticeably broader, more ambitious dimension.

Two striking features of the EA sovereign debt crisis have been how quickly and broadly it spread (in less than three years, it went from Greece, a country accounting

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Box 8.1
The fiscal compact

The Treaty on Stability, Coordination, and Governance in the Economic and Monetary Union, also known as the Fiscal Compact, was adopted in March 2012 by 25 EU members and entered into force in January 2013, after it was ratified by 17 members; it complements and reinforces earlier EU fiscal governance reforms introduced as part of the "six pack," which took effect in December 2011.

The Compact aims at reinforcing the union's fiscal governance by focusing on implementation of the fiscal rules and commitments at the national level. It includes, in particular, a requirement to include in national legislation a rule that limits annual structural deficits to a maximum of 0.5 percent of GDP (1 percent of GDP for countries with debt levels significantly below 60 percent and low long-term fiscal sustainability risks). Countries are also required to design automatic correction mechanisms that will be triggered in the event of deviations from the structural budget balance rules. The European Court of Justice is to verify the transposition of structural budget balance rules to national legislation. The Fiscal Compact also includes a defined path to lower debt ratios to the threshold of 60 percent of GDP (at an annual pace of no less than one-twentieth of the distance between the observed level and the target) as well as stronger enforcement procedures (including the use of a reverse qualified majority, rather than simple majority, to assess noncompliance).

for 2.5 percent of the EA's GDP, to four more countries– Ireland, Portugal, Spain, and Cyprus–with a cumulative share of 15 percent of the EA's GDP) and how long it took for a comprehensive solution to take shape. Two elements can help explain why this happened. First, the explicit prohibition on the ECB to provide support to distressed sovereigns fueled contagion, raising the risk of a breakup of the currency union. A second limiting factor was the policy setup that had crystallized in the first phase of the crisis, with its focus on national decision-making and fiscal consolidation. As a result the EA policy response remained for a long time excessively focused on fiscal consolidation, delaying the emergence of necessary broader, EA-wide policy reforms.

8.4.1 No Lender of Last Resort

As mentioned earlier, the European monetary union was designed as an incomplete union, explicitly excluding fiscal risk-sharing, either by the ECB or other members (Articles 123 and 125 of the TFEU). Similarly the EMU did not include a unified system of financial oversight. Bank supervision remained a national prerogative and crisis management, in case of banking distress, a national responsibility. This meant that in a crisis, there was no explicit lender of last resort, neither for the banks nor for the sovereign.

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Specifically, and in sharp contrast with countries issuing in their own currency, national fiscal authorities in EA members could not benefit from the standard (even if implicit) central bank guarantee that cash would always be made available to repay government debt issued in domestic currency, and banks could not rely on a credible guarantee from their sovereign. This set EA members markedly apart from other countries where the central bank was able to purchase a significant share of government debt issues through the crisis. Illustrating the limitations of the SMP, at end-2012, ECB purchases under the program amounted to somewhat less than 4 percent of outstanding long-term securities issued by EA sovereigns. By comparison, gilts acquired by the Bank of England under its purchasing facility accounted for nearly 30 percent of the end-2012 gilt stock, and the comparable ratio for the Federal Reserve was somewhat less than 14 percent. While no bonds have yet been purchased, the new OMT arrangement is expected to function as a lender of last resort in case the need arises, conditional upon a country agreeing to an ESM program.

The two institutional gaps fed upon each other. As concerns about fiscal sustainability began to surface, sovereign debt markets became prone to recurrent liquidity crises and strong contagion effects. Higher borrowing costs undermined the soundness of public finances and raised doubts about the capacity of fiscal authorities to support ever more vulnerable banking systems. These adverse feedbacks led markets to increasingly question the ability of some EA members to remain in the currency union. This was reflected, in particular, in the sharp increase in the Target 2 claims of countries not under pressure, which rose to more than €700 billion by mid-2012, not only because of shifts in asset balances from countries under pressure to countries not under pressure but also because of strategic cash movements by banks to protect against perceived redenomination risk (Cecchetti et al. 2012).

There has been a debate on whether the existence of Target 2 aggravated the crisis by allowing some countries to postpone bank and private-demand rebalancing (Sinn and Wollmershäuser 2012). However, a unionwide payments and settlements system is integral to a monetary union; its key role is precisely to facilitate between union member countries the financial flows that are inherent in the monetary union. In periods when individual member countries suffered financial stress, the system allowed a smooth reduction of cross-border interbank claims and liquidation of external holdings of crisis-country sovereign debt through matching liquidity flows between central banks. This inherent feature of a monetary union and its implications for crisis management were, however, not fully appreciated before the crisis.

8.4.2 Slow, Complicated Decision-Making Process

The emergence of a collective policy response was further complicated by the lack of an effective economic policy coordinating body for the EA and by the overlap of national and supranational decision levels. Monthly meetings of euro group finance

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ministers did not provide a proper forum for timely responses to new developments. Major decisions and initiatives had to be deferred to meetings of EU heads of states, which were sometimes contentious and where domestic political considerations often played an important and divisive role. In some cases, great importance was given to decisions by national institutions (e.g., the German constitutional court), at the expense of room for maneuver for supranational institutions. Coordination between national authorities and the ECB also proved challenging at times.

As a result the policy response to the sovereign crisis followed a jerky and piecemeal path that could neither calm market nor restore confidence in a lasting manner. In EA policy makers' defense, the depth of the Greek crisis came as a surprise to most (the deficit had been underreported by a factor of four) and the institutional arrangements had not been designed with an internal failure of that size in mind. In the event, the principle of EA assistance to member countries in distress was agreed upon relatively quickly. But it proved difficult to find consensus on its form and scope. In practice, financial support was explicitly constrained ex ante but reluctantly increased ex post, once programmed targets were missed and market tensions intensified. Notwithstanding the increased virulence of the crisis, emergency liquidity provision mechanisms were established only gradually and in a halting manner. The provision of emergency liquidity to banks through national central banks came first. When it proved insufficient, the ECB stepped in by providing extensive liquidity to banks and easing related collateral requirements, but its interventions were kept deliberately limited in amount and time. The ECB's Long-Term Refinancing Operations in late 2011 and early 2012, while meant to provide liquidity to EA banks, allowed for the use of government bonds as collateral and, as a result, increased the available liquidity in peripheral countries' sovereign debt markets. However, the credit risk from the sovereign debt remained with the financial institutions, intensifying sovereign-bank links. Only after pressures resumed, and two years after the beginning of the euro crisis, did the ECB affirm its readiness to intervene in sovereign debt markets as needed to safeguard the monetary union, thereby calming fears of a possible breakup of the eurozone.

Formal crisis resolution mechanisms were put in place at a similarly halting pace. The EFSF, set up at the time of the approval of the first Greek program, was temporary in nature, and it was soon realized that its lending capacity fell far short of what was needed to meet the potential financing needs of EU members under pressure. Its successor, the ESM, sought to permanently strengthen the EU's crisis response capacity, but the scope of its activities, while wider than that of the EFSF, remains to be fully clarified. Indicative of the slow pace at which new EU institutional initiatives have been developed and the time it takes for different member states to approve them, the ESM, announced in December 2010, was finally ratified only in September 2012. Agreement on concrete steps to strengthen fiscal governance has also been long in coming, in spite of the well-understood reform needs.

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8.4.3 Narrow Fiscal Focus

Possibly because instances for EA level policy discussions were more developed in this field, the main focus of the policy response to the crisis remained in the fiscal area. Reforms to the EU fiscal framework through the Fiscal Compact, "six packs," and "two packs" were expected to strengthen the incentives for fiscal prudence. However, the framework remained directed toward bringing down budget deficits to below 3 percent of GDP and public debt to below 60 percent of GDP as quickly as possible.[10] The focus on fixed headline (noncyclically adjusted) deficit and debt ceilings lent a strong procyclical bent to consolidation efforts. In an environment of pervasive uncertainties, fiscal multipliers were often underestimated and the targets missed, unleashing a negative feedback effect whereby additional tightening measures were introduced, further depressing near-term growth and complicating the attainment of the targets.[11] Even though the ambitious headline targets were often missed, in a context of negative growth and high multipliers, the repeated adjustment efforts resulted in larger than expected consolidation when measured in cyclically adjusted terms. By 2012, most EA countries had implemented substantial fiscal adjustments. In fact, a comparison of the improvement in the CAB projected at the onset of the sovereign debt crisis with the outcome shows that the improvement was in most cases larger than planned during 2010 to 2012, with a positive surprise on the order of about 1 percentage point of GDP for the EA as a whole (figure 8.10).

In contrast, growth disappointed, as the outcome during 2010 to 2012 fell around 2.5 percentage points short of the projection for the EA on average, suggesting that the negative growth impact of the consolidation efforts was underestimated. The weakening growth did raise doubts about EA countries' capacity to implement their adjustment plans. As a result confidence effects were elusive and borrowing costs often increased in the near term as markets were more responsive to lower growth prospects than to fiscal consolidation efforts (Cottarelli and Jaramillo 2012). Immediate financial payoffs were thus limited: while the level of budget deficits started to gradually converge, spread dispersion remained high.

The protracted resolution of banking difficulties was also a drag on growth. Although bank runs were forestalled through the provision of EA liquidity, no supervisory authority was in place to rigorously assess banks' overall risk exposure and deal with distressed banks. In the absence of a cross-border resolution mechanism, national authorities were reluctant to recapitalize parent banks and assume all the related fiscal costs, even after stress tests revealed significant capital shortfalls. As a result many problem banks were kept afloat without prospect for a lasting solution. This not only intensified adverse sovereign-bank loops, but also constrained credit supply, putting the brakes on the recovery in peripheral countries. Only in mid-2012 was a plan floated for a Banking Union with a common supervision and resolution

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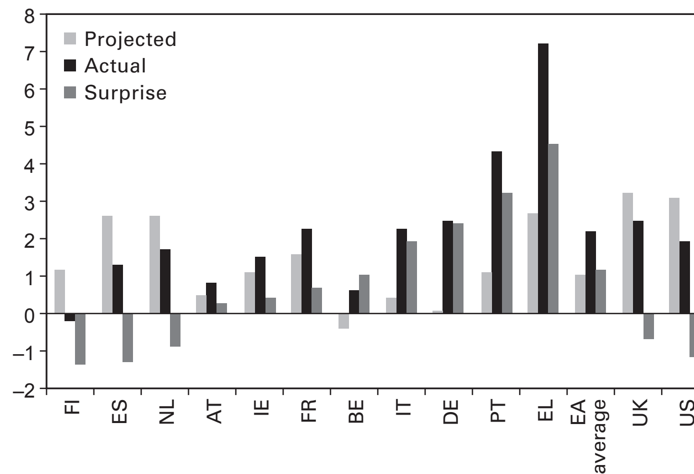

Figure 8.10
Projected and actual improvements in the cyclically adjusted balance, 2010 to 2012 (percent of GDP). Bank supports costs have been excluded from outturns for Ireland, Portugal, and Germany.
Sources: European Commission Economic Forecasts (spring 2010 for projections; autumn 2012 for out-turns)

mechanism. Even then, reaching agreement on its actual modalities has proved to be a slow and difficult process.

Since the crisis, intra-EA current account imbalances and relative price differences have continued to unwind. However, the jury is still out on whether these developments are of a temporary nature, mainly driven by the recession-induced import compression, or reflect deeper structural changes. Unit labor costs have fallen significantly in the countries that entered the crisis with high external deficits (Greece, Ireland, Portugal, and Spain), under the joint impact of job-shedding-driven productivity gains and of wage adjustment. But lasting structural adjustment cannot simply rely on wage and price restraints; it must be supported by broader gains in productivity and nonprice competitiveness. Several countries have initiated important labor market reforms whose effects are not yet fully felt and may yield benefits down the road. The EU has put in place a framework to monitor broader macroeconomic imbalances and formulate policies to eliminate excessive imbalances, which over time may facilitate broader policy convergence.

8.5 Concluding Remarks: Safer Harbor in Sight?

The global financial crisis has had a dramatic impact on the EA as it unveiled what would become a full-blown and EA-wide sovereign debt crisis. This chapter has

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explored why a sovereign debt crisis hit the EA, but not other advanced economies with similar fiscal imbalances. It points to institutional weaknesses in the original EMU design that allowed the buildup of macro-financial imbalances within the EA before 2008. Once the global financial crisis brought those into the open, institutional gaps and political economy constraints then combined to delay the capacity of the European authorities to define policy responses with a broad enough scope, both geographically and topically, to restore confidence in the EA project.

After a searching period, sizable progress has been made to address these shortcomings. New and important steps were taken in the summer of 2012, almost three years after the initial events in Greece that triggered the sovereign debt crisis. These included a proposed framework for sharing the burden of bank recapitalizations, an agreement in principle on a proposal to form a Banking Union, and a strengthening of fiscal governance. Most important, to address fears about the viability of the euro itself, the ECB announced both its intention "to do whatever it takes" to preserve the EMU and the creation of the Outright Monetary Transactions Facility to stabilize EA sovereign debt markets. In the fiscal area, the Fiscal Compact "six packs" and "two packs" introduce binding fiscal rules at the national level. These initiatives go a long way to address the institutional gaps at the core of the crisis and indeed considerably improved investor sentiment toward the EA as a whole.

Still EA leaders have yet to agree on the specifics of important elements of the new construction, including the scope for a joint deposit insurance scheme and bank resolution mechanism and room for additional risk-sharing through pooling of national budget resources. More important, they still have to build a credible and recognized economic decision making instance for the EA as a whole. Some of the recent decisions go in that direction. It is to be hoped that this crisis, like past crises in the process of European economic integration, will served as engine for further institutional changes toward a more complete union.

On the fiscal front, three general policy lessons emerge from the EA experience through the crisis.

- *Fiscal policy in times of global stress needs to show a high degree of flexibility.* The higher than usual uncertainty around growth forecasts and the volatility of market sentiment complicate the design of fiscal policy. The challenge is exacerbated by the fact that fiscal multipliers are likely to be higher than average in a recession, and that most trading partners are also consolidating. In such circumstances, a gradual but steady path of consolidation will have more chances of success than heavy frontloading or backloading. Structural or cyclically adjusted targets can help rebuild confidence while leaving space for the operation of automatic stabilizers. But the calculation of structural balances, or even of output

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gaps, raises nontrivial technical difficulties. Such targets also are tricky to explain to the general public, and thus more prone to suspicions of manipulation. Combining sufficient flexibility in the targets with credibility in the direction of the fiscal stance is thus the first challenge for fiscal policy.

- *Countries with large banking systems may need stronger fiscal buffers*. Financial globalization tightens the links between banks and their sovereigns by increasing the size of banks' balance sheets and making them potentially more vulnerable to developments outside a country's natural supervision perimeter. The possibility that hard-to-control negative feedback loops between the banks and their sovereign unleash quickly was particularly evident in the EA setting. But this possibility also resonates for countries outside the EA with large, internationally active banks, such as, for example, the United Kingdom. The first response is strengthened regulation, including macroprudential regulation, in coordination with supervisors in partner countries. But these countries could also consider building larger fiscal buffers in quiet times, to increase their response capacity in case of a crisis.
- *The institutional design of the EA, an incomplete monetary union, puts an inordinate share of the adjustment burden on national fiscal policies*. Other macroeconomic management policies, such as monetary or exchange rate policies, have limited, if any, power to mitigate the impact of shocks. With rapid financial integration, however, the fiscal levers are insufficient to prevent or reverse the emergence of broader intra-EA imbalances. In addition the small size of the EU common budget severely restricts the space for smoothing shocks across member states. The announcement by the ECB of its readiness to provide financing to prevent undue fiscal distress was a major step in alleviating pressure on national budgets. The elaboration of EA-wide banking and financial policies should further even out the adjustment burden going forward. However, it remains to be seen whether the currency union will be able to prosper without more elaborate common risk-sharing or stabilization instruments.

Appendix A: Ten-Year Sovereign Bond Yields and Crisis Timeline

The appendix figure and the more detailed account of market and policy events in the EA below provide a timeline of the crisis and document related sovereign spread movements.

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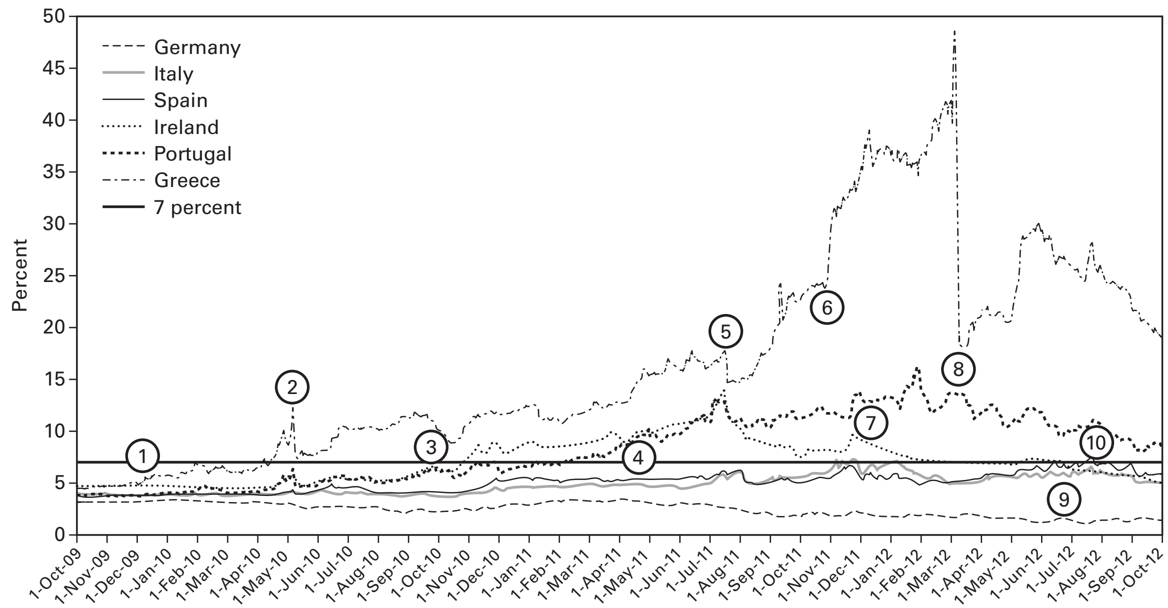

Figure A8.1

Ten-year sovereign bond yields and crisis timeline: (1) Yields rise after initial Greek credit rating downgrade following revelations of much higher than expected 2009 deficit; (2) yields spike after Greece rating downgraded to “junk” then fall after €110 billion Greek bailout and ECB SMP announced; (3) Irish yields jump after government announces large increase in bank bailout costs, with Irish government bailout agreed in late November; (4) Portugal requests bailout after contagion drives up its yields following Irish bailout; (5) initial second Greek bailout announced, with relatively mild PSI component (21 percent haircut); (6) yields spike in response to revised second Greek bailout, with more financing (€130 bn) and more costly PSI (50 percent haircut); (7) the ECB announces two 25 bp rate cuts and the LTRO worth €1 trillion to counterfinancial fragmentation in the EMU; (8) even larger second Greek bailout announced (€174 bn), followed by final agreement on Greek PSI (more than 50 percent haircut); (9) after its yields rise to 7 percent, Spain seeks funds for banking sector bailout and EA leaders agree to create the Banking Union; (10) Draghi states that the ECB is “ready to do whatever it takes” to preserve the EMU, and markets appear convinced as yields fall.
Source: Datastream

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Table A8.1
Timeline of key market and policy events since Lehman's collapse

	Market events	Policy events
September 2008	• Lehman Brothers holdings incorporated files for Chapter 11 bankruptcy protection, Bank of America agrees to buy Merrill Lynch for $50 billion. • Dow Jones Industrial Average plunges 504 points to 10,917 (15/09/2008).	• US government sponsored mortgage firms, Fannie Mae and Freddie Mac, are rescued by the US government (07/09/2008). The Fed and Treasury agree to bailout for AIG. • The Fed makes its first interest-rate cut of 0.5 to 4.75% since 2003. • One of the biggest insurance and banking companies in Europe, Fortis, is given a $16.4 billion capital injection from the governments of Netherlands, Luxembourg, and Belgium. Dexia follows shortly, helped by Belgian, French and Luxembourg governments ($9 billion). • Ireland's Finance Minister Brian Lenihan announces sweeping guarantee of bank deposits and debt. (30/09/2008).
October 2008	• Banks all over Europe and US struggle as EU leaders discuss bank rescue plans along the lines of those in US and UK. • The IMF says more European banks may fail as freeze inter-bank lending occurs (22/10/2008).	• US Congress passes the "Emergency Economic Stabilization Act of 2008," commonly known as TARP, a $700 billion rescue package to aid the financial sector (03/10/2008). • RBS, Lloyds TBO, and HBOS among other banks receive a bailout from the UK government. • The IMF, World Bank and the European Union offer Hungary a loan of $25.1 billion. It is the biggest rescue package for an emerging economy since the start of the crisis, exceeding Hungary's quota 10 times (29/10/2008).
November 2008		• IMF rescue packages approved for Iceland ($2.1 billion), Pakistan ($7.6 billion), and Ukraine ($16.5 billion). • Chinese government offers a big stimulus package of $586 billion, about 7% of its GDP. • G20 summit in Washington to discuss measures to strengthen growth and aid the financial system. • The European Commission unveils €200 billion economic recovery plan to stimulate spending and boost confidence. • US Fed announces liquidity injection of $800 billion to stabilize financial system. AIG receives $150 billion in additional bailout support from Fed and Treasury, while TARP funds used to buy preferred shares to bolster capital, and guarantees on bank assets and senior debt provided for a number of major US banks.

(*continued*)

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Table A8.1
(*continued*)

	Market events	Policy events
December 2008	• Central banks around the world cut rates and introduce measures to support lending.	• Following Spain's announcement of a fiscal stimulus in November, France, Germany, and Sweden announce stimulus plans in early December. • President Bush announces that $17.4 billion of TARP funds will be used for a bailout of major carmakers. • The Irish government announces plans to provide €9 billion to recapitalize listed banks.
January–March 2009	• Stock markets continue to fall and unemployment rises in US and other countries.	• US Congress approves a $787 billion stimulus package. • GDP growth projections revised downwards for a number of countries. G20 finance ministers pledge "sustained effort" to restore the world economy to growth. • In March the IMF announces reforms to lending procedures for member countries and with the EU agree to provide a rescue package worth €20 billion to Romania.
April–August 2009	• World stock markets gradually begin to recover after bottoming out in March. • Stringent bank stress tests performed for the largest US banks and results released in May. Large US banks found to have too little capital forced to raise private capital or accept additional support from TARP funds. A number of US banks announce plans to raise private capital by issuing equity, which helps restore market confidence in US banks. • Two of the three major US car makers are taken through an accelerated government supported bankruptcy.	• Revised growth figures for 2008Q4 show GDP fell more than previously thought and GDP continued to contract in 2009Q1, while growth estimates for 2009 are revised downwards again. • The IMF calls for European banks to be subject to stress tests similar to those in the US.
July–September 2009	• Unemployment numbers come out lower than expected and the economic outlook is optimistic. • The decline in GDP growth in many advanced countries begins to slow. According to Ben Bernanke, the US recession is most likely over.	• Debt continues to rise and US Treasury officials suggest that the cap to public borrowing may need to be raised from the current $12.1 trillion. • Despite confidence that the US is nearing an end to the recession, the deficit hits a record $1.4 trillion (08/10/09).

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Table A8.1
(*continued*)

	Market events	Policy events
October 2009		• The Socialist party wins elections in Greece. George Papandreou becomes prime minister and soon after announces that the projected deficit for 2009 will be much higher than previously projected.
December 2009	• Greece is downgraded to triple B+ with negative outlook following revelations in October and November of much higher than expected deficits for 2009. S&P changes the outlook of Portugal and Spain to negative.	• Greek budget deficit is revised from 3.7% to ultimately 13.6% of GDP.
January–March 2010	• Spanish government performs a successful 6.9 billion bond issuance.	• Greek government announces multiple austerity plans to increase tax revenue, cut spending, and cut salaries in the public sector. • Portugal announces a privatization plan, tax increases on high income, and limit to public-sector wages.
April–August 2010	• S&P cuts Greece's rating to "junk" on April 27, drives yields to unsustainable levels. • Comments by Merkel about restructuring sovereign debt after bailout agreed led to spike in Greek yields and contagion in Ireland and Portugal, motivating ECB announcement of SMP and EA leaders agreement on EFSF (May 10, 2010)	• Announcement of €110 billion bailout for Greece (May 2).
September–December 2010	• Disagreements between euro area leaders and proposals to restructure sovereign debt (generating contagion to Spain), as well as government resistance to accepting bailout drove up yields in late October/early November. • Yields still rose as discussions of proposals aired to include restructuring/PSI in ESM (ESM agreed on November. 28) rescues.	• Irish government announces bank bailout costs in excess of €30 billion and fiscal deficit of 32% of GDP (Portugal's track Ireland's until then). • Irish government agrees bailout November 21.

(*continued*)

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Table A8.1
(*continued*)

	Market events	Policy events
January–June 2011	• ECB raises rates 25 basis points (May 6)	• Portugal requests bailout after contagion drives up yields following Irish bailout. (May 5). Official loan is approved on May 16 at €78 billion. It will be equally split between the EFSF, ESM, and the IMF.
July 2011	• Yields in Greece, Ireland, and Portugal have risen to unprecedented levels, with Spain and Italy's yields rising too, though less. • Moody's slashes Greek credit rating shortly after (July 25), cites PSI as default.	• Second Greek bailout announced, with relatively mild PSI component (21% haircut).
August 2011	• US federal government takes a credit-rating hit, being downgraded by S&P from AAA to AA+. Still, US yield fell by two 2 bp to 2.54% the next day.	
September–October 2011	• Yields spike in response to bailout and Greek PM's referendum proposal (withdrawn).	• Revised second Greek bailout announced, with more financing (€130 billion) and more costly PSI (50% haircut).
December 2011	• After performing stress tests on more than 70 banks, the European Banking Authority says more than 30 banks in 12 countries must come up with a total of €114.7 billion ($153.8 billion) in new capital by next June.	• ECB announces second 25 bp cut (first on November 3) and the LTRO, which provides €1 trillion of 3-year collateralized loans to banks (first half in December 2011, second half in February 2012).
January–March 2012	• Sharp drop in Greek and Portuguese yields, only temporary in the case of Greece as election-related uncertainty and comments by EA leaders that a Greek exit from the EMU would be manageable drove yields back up.	• Even larger second Greek bailout announced February 21 (€174 billion), followed by final agreement on Greek PSI, with more than 50% haircut.
April–June 2012	• Uncertainty about implementation and comments from some euro area leaders after Banking Union announced, suggesting this would not apply to legacy assets, undermine the effort to break sovereign–bank link as Spain's yields keep rising.	• Spain seeks support for bailout of banking sector, without formal bailout program, and two days later euro area leaders announce agreement to create Banking Union and allow the ESM to recapitalize banks directly.

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Table A8.1
(*continued*)

	Market events	Policy events
July–September 2012	• Yields for peripheral countries fall, even before the announcement of the details of the mechanism that will be used.	• Draghi states that yields no longer reflect fundamentals, but instead convertibility risk, impeding monetary policy transmission. Draghi states that the ECB is "ready to do whatever it takes" to preserve the EMU and that "it will be enough." • The OMT program announced in September to allow unlimited buying of sovereign bonds by ECB as long as country is applies for some type of program with ESM that comes with conditionality attached and monitored by IMF. • US Fed announces third round of quantitative easing (QE), involving purchasing $85 billion Treasury bonds and mortgage-backed securities per month for the foreseeable future.
October–December 2012	• Yields on Italian sovereign debt rose less than half a percentage point in December following the resignation of Mario Monti, who led a technocratic government for 13 months.	• ESM activated in October. • Official creditors agree to extend maturity of loans and reduce interest rates on loans. Further reduction in Greek debt held by private sector achieved by buying back its debt at prices less than face value. • Negotiations with Cyprus over bailout request continue. • In December, EU finance ministers agree on a key component of a Banking Union, the Single Supervisory Mechanism (SSM) for banks in the euro area, with the ECB assuming supervisory responsibility for large banks by 2014. Agreement proves elusive on other key features of the Banking Union.
January–June 2013	• Despite some short-term gyrations in yields of peripheral countries, overall markets remain subdued. • Ireland issues €5 billion in 10-year bonds. • Global financial markets roiled by statements that US Fed may start tapering QE program in September.	• Cyprus reaches initial bailout agreement with the Troika in late March, but a provision to haircut all bank deposits causes the Parliament to reject the agreement. Revised bailout plan includes haircuts on deposits above €100,000 at the two largest banks and the wind-down of one of the banks. Capital controls are imposed to prevent capital flight from Cyprus that would cause the collapse of the entire financial sector. • The ECB lowers rates on main refinancing operations and marginal lending facilities.
July-September 2013	• Yields on Portuguese debt rise due to resignations of key ministers.	• The ECB introduces a form of "forward guidance"–committing to keep rates low for an extended period–in July. • The US Fed decides to delay the start of QE tapering.

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Notes

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1. See Turrini (2008) for a more in-depth analysis of the procyclical stance of euro area fiscal policies in economic good times, driven mainly by expenditure developments.

2. Price and Dang (2011) show how asset price movements can be incorporated into cyclically adjusted balances (CABs) and show that the effect was particularly pronounced for Spain and Ireland.

3. The estimates in Price and Dang (2011) indicate that, as a share of GDP, Finland's surplus and Greece's deficit were even farther apart in 2007 when adjusted for the cycle and corrected for asset prices rather than in headline terms.

4. This complexity reflects, among other factors, the interpretation of the boundaries of general government, consolidation issues, and the use of accrual accounting.

5. "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 favor 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" (Article 123, TFEU).

6. "The Union shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of any Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project. A Member State shall not be liable for or assume the commitments of central governments, regional, local or other public authorities, other bodies governed by public law, or public undertakings of another Member State, without prejudice to mutual financial guarantees for the joint execution of a specific project"(Article 125, TFEU).

7. Larger automatic stabilizers and countercyclical fiscal rules could help mitigate the risk that implementation lags significantly weaken the effectiveness of fiscal stimulus (Blanchard et al. 2010; Kumhof and Laxton 2009; Baunsgaard and Symansky 2009).

8. The EFSF was agreed by the 27 member states of the European Union with the objective of preserving financial stability in Europe by providing financial assistance to eurozone states in economic difficulty, selected interventions in primary and secondary debt markets, and recapitalizations of financial institutions through loans to governments. The EFSF is backed by guarantee commitments from the eurozone member states for a total of €780 billion and has a lending capacity of €440 billion.

9. For an analysis of the mechanisms that can create the conditions for self-fulfilling debt runs in a monetary union, see De Grauwe (2012).

10. In program countries (Greece, Ireland, Portugal, and Cyprus) the pace and size of fiscal consolidation efforts were determined largely by financing constraints.

11. See Baum and others (2012), Blanchard and Leigh (2013), and Eyraud and Weber (2013).

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