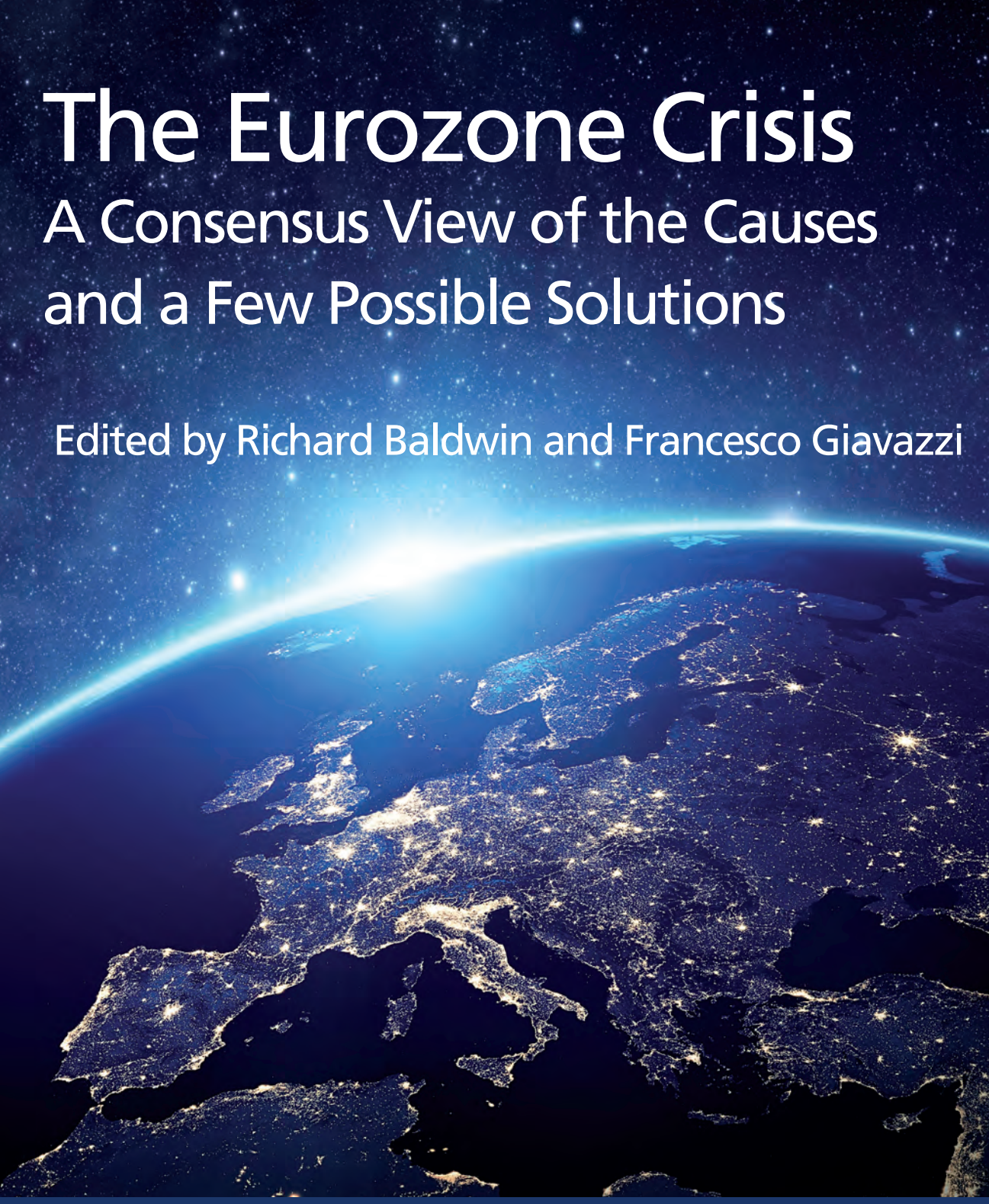
The Eurozone Crisis

A Consensus View of the Causes and a Few Possible Solutions

Edited by Richard Baldwin and Francesco Giavazzi



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A VoxEU.org Book

The Eurozone Crisis
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CEPR Press

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Foreword

The Eurozone crisis has been running since May 2010: half a decade in and it is nowhere near finished. Most observers think more needs to be done to finally put this crisis behind us and to reduce the severity of future crises that are sure to come. The discussion, however, has to date been fragmented and full of fallacies. As Charles Wyplosz writes in his chapter, "authors typically focus on their pet explanations, using a slew of carefully selected data". As a first step to finding a broad consensus on what more needs to be done, Richard Baldwin and Francesco Giavazzi asked 18 world-renowned economists to answer the simple question: "What caused the Eurozone Crisis?" The notion was to agree on what happened as the first step to thinking about what should be done. The essays were uncoordinated yet – despite the authors' diverse backgrounds – they are in considerable agreement with one another.

The goal of this eBook is to establish a consensus on the causes and a narrative for the EZ crisis: to agree what happened as a first step towards developing a consensus on what should be done to fix the current problems and to create mechanisms that will make the next crisis less damaging. It is always easier to agree on what happened in the past than to agree on what needs to be done to avoid the same mistakes in the future. This book includes some concrete ideas as to the best way forward, but the issue of fixing the Eurozone is a task to be tackled in future eBooks.

This eBook is a first step in a bigger CEPR project, "Rebooting Europe", which seeks to marshal a critical mass of Europe's best thinkers in developing ways to get Europe working again. To undertake a systematic rethink of today's European socio-economic-political system. In short, to figure out a way to update Europe's 'operating system' and reboot.

As usual, our thanks go to Charlie Anderson for excellent and efficient handling of the eBook's production. CEPR, which takes no institutional positions on economic policy matters, is delighted to provide a platform for an exchange of views on this critical topic.

Tessa Ogden
Deputy Director, CEPR
August 2015

Introduction

Richard Baldwin and Francesco Giavazzi
The Graduate Institute and CEPR; Bocconi University and CEPR

The Eurozone crisis which broke out in May 2010 is a long way from finished. Charles Wyplosz puts it bluntly in his chapter: "Five years later, growth is miserable and is forecasted to remain miserable as far as the forecasters' can see. Governance is in disarray as the tragic Summit of July 13 – the last of an incredible series of official meetings – showed." Worse yet, there is widespread belief that the fragilities and imbalances that primed the monetary union for this crisis are still present.

As a first step to finding a broad consensus on what more needs to be done, this eBook gathers the views of a dozen world-renown economists on a simple question: "What caused the Eurozone Crisis?" The focus was to be on thinking about the causes as a prelude to developing remedies.

Although the essays were largely uncoordinated – and the authors hark from diverse backgrounds – a remarkably coherent message emerges from this collection. In this introduction, we have two goals.

- The first is to pull together what we feel is the mainstream view of the crisis narrative.

In the world of policymaking, narratives are incredibly important since if we cannot agree on what happened – or more precisely, on what were the most important things that happened – then we cannot agree on how to remedy the situation.

- The second is to identify a consensus view of the causes of the EZ crisis.

Again, we cannot know what needs fixing until we agree broadly on what was broken.

While the eBook's focus is on the causes of the crisis, some of the authors also discussed possible remedies. These ideas will lead us in the next step of this project: an eBook on ways forward for the EZ.

Thinking systematically about the crisis

The core reality behind virtual every crisis is the rapid unwinding of economic imbalances. The size and duration of the crisis typically depends upon: (i) the size of the initial imbalances; (ii) how the initial shock gets magnified by a variety of 'amplifiers'; and (iii) how rapidly and effectively policy responds.

In the case of the EZ crisis, the imbalances were extremely unoriginal. They were the standard culprits that have been responsible for economic crises since time immemorial – namely, too much public and private debt borrowed from abroad. Too much, that is to say, in relation to the productive investment financed through the borrowing.

From the euro's launch and up until the crisis, there were big capital flows from EZ core nations like Germany, France, and the Netherland to EZ periphery nations like Ireland, Portugal, Spain and Greece. A major slice of these were invested in non-traded sectors – housing and government services/consumption. This meant assets were not being created to help pay off in the investment. It also tended to drive up wages and costs in a way that harmed the competitiveness of the receivers' export earnings, thus encouraging further worsening of their current accounts.

When the EZ crisis began – triggered ultimately by the Global Crisis – cross-border capital inflows stopped. This 'sudden stop' in investment financing raised concerns about the viability of banks and, in the case of Greece, even governments themselves. The close links between EZ banks and national governments provided the multiplier that made the crisis systemic.

Importantly, the EZ crisis should not be thought of as a sovereign debt crisis. The nations that ended up with bailouts were not those with the highest debt-to-GDP ratios. Belgium and Italy sailed into the crisis with public debts of about 100% of GDP and yet did not end up with IMF programmes, while Ireland and Spain, with ratios of just 40%, (admittedly kept artificially low by large tax revenues associated with the real estate bubble) needed bailouts. The key was foreign borrowing. Many of the nations that ran current account deficits – and thus were relying of foreign lending – suffered; none of those running current account surpluses were hit.

The initial shock – the rapid loss of EZ investors' trust in the deficit nations– was amplified in several ways. Given the EZ design, governments who got in trouble had no lender of last resort. Which meant their euro denominated borrowing was akin to foreign currency debt in traditional sudden stop crises. The natural lender of last resort, the ECB, was explicitly forbidden from playing the role. This ruled out one of the classic ways out of avoiding government default – having the central bank print the money needed to service the debt.

The predominance of bank financing was another amplifier of problems. European banks were thinly capitalised and extremely large relative to the countries' GDP. They were so large that they had to be saved, but their size also created a 'double drowning' scenario. This is exactly what happened in Ireland. In what might be called a tragic double-drowning scenario, Ireland's banking system went down first, and the government of Ireland went down trying to save it. Spain and Belgium flirted with, but ultimately avoided the same fate.

A third amplifier is the so-called doom-loop – the potential for a vicious feedback cycle between banks and their government. Fear about the solvency of a nation's government fans fears about the solvency the nation's banks, which in turn weakens the economy, thus worsening the sustainability outlook for the nation. A deadly helix of rising risk premiums and deteriorating budget deficits can suck nations into a debt default vortex. This happened to Portugal and came close to happening to Italy, Spain and Belgium.

Even France and Austria flirted with the shadow of doom-loops. The key element in this mechanism is that EZ banks are heavily invested in the debt of their own government.

The final amplifier was the rigidity of factor and product markets in nations that could not restore competitiveness via a currency devaluation. Indeed, five years down the road, few of the EZ nations have recovered their pre-crisis growth or employment rates, although Spain surprises observers with the strength of its recovery.

The third determinant of crisis severity – appropriateness of the policy response – was clearly a big problem in the Eurozone. Nothing in the EZ institutional infrastructure was prepared for a crisis on this scale. The possibility had simply not been considered when setting up the euro's architecture. Many mistakes were made. Indeed, judging from market reactions, each policy intervention made things worse. The corner was only turned in the summer of 2012 with the 'whatever it takes' assertion by ECB President Mario Draghi.

Outline of the introduction

The next section presents what we believe is a consensus narrative of the EZ crisis. It has not been approved by all the contributors to this eBook, but we believe it is in line with the essence of their analyses.

The subsequent section gathers what we view as a consensus on the causes of the crisis – both the proximate causes and, if you will, the causes of the causes.

While the eBook's focus is on the causes of the crisis, some of the authors presented remedies and the next to last section summarises the most specific of these.

The final section presents a summary and our concluding remarks.

EZ Crisis: A consensus narrative

The first step to repairing the Eurozone is to answer the questions: 'what is broken?', and 'what broke it?' This section presents what we believe is a consensus view on the main elements of the crisis's evolution as a prelude to answering the two questions.

Before detailing the damage, "it is worth recalling that the Eurozone did not fare badly in the first years of the Global Crisis," as Giancarlo Corsetti writes in his chapter. "Participating in the European monetary union appeared to shelter countries from the early difficulties experienced by countries with a large financial sector relative to their tax base, such as the UK and Switzerland." That was not to last.

Building up problems

The 1990s was a time of exchange rate turbulence in Europe with major crises in 1992 and 1993. In the face of large differences in inflation rates and the occasional devaluations, markets demanded very large risk premiums. Nations like Italy, Spain and Portugal paid far higher rates on their debt than Germany and other DM-bloc countries (Netherlands, Austria, France, and Belgium). That all changed with the move towards monetary union.

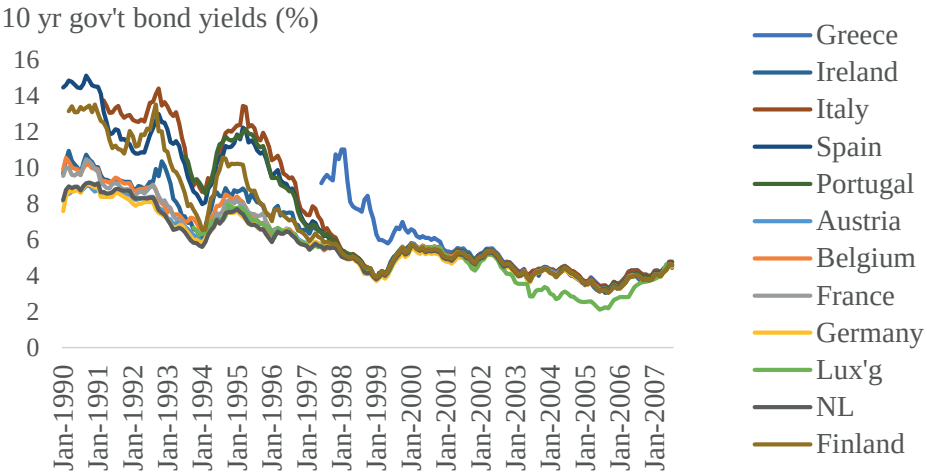
Starting from 1995, Eurozone interest rates converged in anticipation of the single currency.

- Risk premiums evaporated as markets believed the Maastricht Treaty promises of 'no devaluation', 'no default', and 'low inflation forever for all'.

As Figure 1 shows, government bond yields for all prospective Eurozone members converged to the German rate which itself fell substantially and remained low until the start of the financial crisis. As Feld et al. write in their chapter: "Despite substantial differences in macroeconomic and fiscal policies, member countries were able to access financial markets at almost identical yields between 2001 and 2007".

The convergence, however, was as Jeff Frankel writes in his chapter, "viewed as a good thing rather than a bad thing." A sign of real convergence between North and South EZ countries.

Figure 1. Risk premiums disappeared in the run up to the crisis.



Source: OECD online database with authors' elaboration.

The magnitude of the changes were astounding. Italy saw the nominal cost of borrowing fall from 13% to 3% in a decade. The cheapening of credit was not quite as stark for other Eurozone members, but even Germany's government bond yields dropped from 7% to 3%. Indeed all around the world, the cost of capital fell steadily in what Ben Bernanke has been called a 'global savings glut'.

This had consequences:

- Cheaper credit encouraged borrowing throughout the monetary union, some public, some private and some foreign.

Each type of borrowing played a role in setting up the pre-crisis imbalances.

The critical imbalance: Intra-EZ lending and borrowing

The EZ crisis was not, at its roots, a sovereign debt crisis. The culprit was the large intra-EZ capital flows that emerged before the crisis.

Daniel Gros puts it succinctly: "The euro crisis started as a classic 'sudden stop' to cross border capital inflows. As boom turned into bust, government lost their tax base and had to assume private debt, thus creating a public debt crisis. The highly leveraged banking system of the Eurozone, tightly linked to national governments, provided a multiplier, which made the crisis systemic."

The problem, as Paul de Grauwe notes in his chapter was that "the European monetary union lacked a mechanism that could stop divergent economic developments … which were crystallised in the fact that some countries built up external deficits and other external surpluses."

These imbalances baked problems into the EZ 'cake' since, as Guido Tabellini writes in his chapter, "if a sudden stop occurs, the sovereign most likely will lack the fiscal resources to cope with it. The size of the financial sector has grown just too large."

Recalling that a nation's current account is its net borrowing from abroad, large increases in foreign indebtedness shows up as a negative current account. A positive current account indicates that the nation is, on net, lending to foreigner nations.

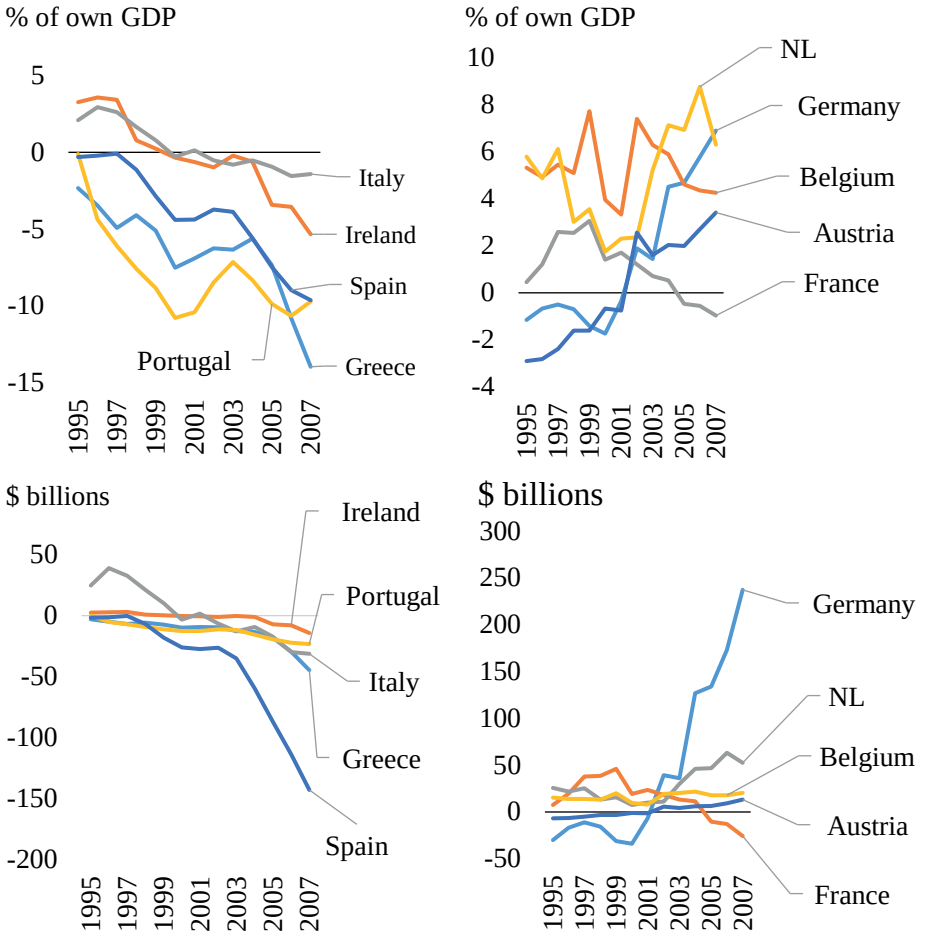
To interpret the individual current accounts, we must depart from an essential fact:

- The Eurozone's current account as a whole was in balance before the crisis and remained close to balance throughout.

Thus there was very little net lending from the rest of the world to EZ countries. Unlike in the US and UK, the global savings glut was not the main source of foreign borrowing – it was lending and borrowing among members of the Eurozone. For example, Germany's large current account surpluses and the crisis countries deficits

mean that German investors were, on net, lending to the crisis-hit nations – Greece, Ireland, Portugal and Spain (GIPS).

Figure 2. Current accounts: The core lent to the GIIPS from 2000 to 2007



Source: WEO online database with authors' elaboration. Note: Current account deficit (-) and surplus (+).

Nevertheless, as Philip Lane points out, even if the savings wasn't coming from China, the atmosphere mattered. "The evidence indicates that the 2003-2007 period can be characterised as a 'credit supply' shock," he writes. "The global financial system was more willing to tolerate large net debt flows to these advanced economies." He points to the deep causes as: "low policy rates adopted by advanced countries' central banks,

financial innovations (such as new types of securitisation) and shifting beliefs about risk levels and risk absorption capacity combined to foster an extraordinary boom in international capital flows."

With these points in mind, Figure 2 shows the evolution of the current account surplus for the turnkey nations. The top charts shows the figures for the pre-crisis years as a share of each nation's own GDP. This gives an idea of how important the flows were to the macroeconomy of each nation. As the top left panel of Figure 2 shows:

- All the nations that eventually ended in bailout programmes – Greece, Ireland, Portugal and Spain, or the GIPS for short – ran substantial and increasing current account deficits.

Italy, which almost got in trouble, was also increasingly relying, though to a much lesser extent than, say Spain, on foreign lenders during the decade preceding the crisis.

The top right panel shows that:

- The nations who had to contribute to the bailouts were all significant net lenders to other EZ nations.

France is the exception that tests the rule. It started out with a positive current account but saw its position deteriorate in the late 2000s. Unlike the other core nations, France started to have problems in the height of the crisis (its debt rating was cut in 2012).

These balance-of-payment figures as a share of GDP illustrate the importance of foreign capital flows from the perspective of the individual nations. But given the gigantic size differences among EZ members, the ratios hide important information. The second row of charts shows the current account figures in billions of dollars, not as a proportion of national GDP. Here we see that there were really two outliers:

- By 2007, Germany was, on net, lending almost $250 billion per year to other EZ nations.

The figure for the next biggest net lending, Netherlands, was $50 billion or less.

- Spain was by far the largest net borrower, with its capital inflows reaching $150 in the year before the crisis.

No other nation was even close in terms on the lending or borrowing sides.

Investment versus savings

The current account is, by construction, the difference between the amount a nation invests and saves. Looking at savings and investment thus provides hints as to the drivers of current account imbalances.

As Figure 3 makes it clear:

- Broadly speaking – the core nations had above-average savings, while the GIIPS had below-average savings (Ireland being the exception).

The Dutch, Belgian and (at the end) German cases stand out in particular. Italy, Spain and Portugal, by contrast, stand out on the low side.

- When it comes to investment, the core nations tended to underinvest at home (compared to the EZ average), while the GIIPS tended to overinvest.

Spain and Ireland are the outliers here; they invested far more than the EZ average during the pre-crisis years.

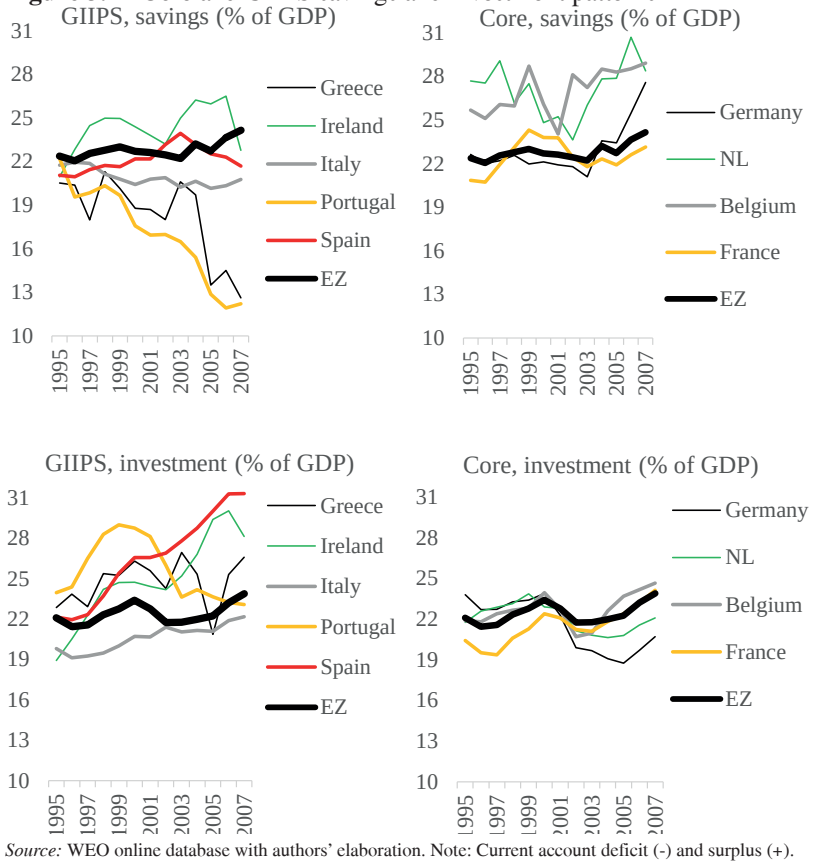
At the time, this basic pattern was not viewed as source of EZ problems, but rather as a badge of success. It was widely believed that these sorts of private capital flows were part of the natural real convergence within a monetary union. The poorer nations, which had abundant investment opportunities, were attracting investors from richer nations were capital faced diminishing returns. Or at least that was the contemporaneous thinking (see for instance Blanchard and Giavazzi in The Brookings Papers on Economic Activity in 2002).

A big problem was that much of the investment headed towards non-traded sectors like government consumption and housing.

Competitiveness imbalances

As Agnès Bénassy-Quéré put it: "capital flows tended to feed non-tradable sectors in the periphery of the Eurozone. In receiving countries, the increase in liabilities was not sustainable since it did not correspond to the building up of export capacities. Worse, if contributed to house price bubbles that would inevitably burst at some point."

Figure 3. Core and GIIPS savings and investment patterns



Source: WEO online database with authors' elaboration. Note: Current account deficit (-) and surplus (+).

The inflows also tended to drive up wages and costs that resulted in competitiveness losses that validated the current account deficits. All four nations that eventually signed bailout packages – Greece, Ireland, Portugal and Spain – had inflation well in excess of the average.

As Feld et al write, these nations "suffered a considerable loss in price competitiveness during the debt-financed booms, due to major wage increases and high inflation. Consequently, domestic export companies were put at a competitive disadvantage and lost trade shares. The loss of price competitiveness combined with the debt-financed increase in domestic demand and the associated imports resulted in high current account deficits."

By contrast, all the core nations except Netherlands and Luxembourg had inflation below the norm, especially Germany.

It was not supposed to work this way. In their chapter, Thorsten Beck and José-Luis Peydró note: "In fact, a key argument in favour of peripheral countries to adopt the euro was that the only way to go out of a crisis would be with a more flexible, competitive economy through structural reforms. Sadly, the substantial lower risk premiums … that came with the euro implied strong booms but too little economic reforms."

Public debt buildup

In her chapter, Beatrice Weder di Mauro crystallises the thinking of all authors in writing: "There can hardly be any disagreement on the diagnosis that there was too much debt accumulation over the course of the first eight years of the existence of the euro."

Figure 4 shows that the evolution of public debt does not line up well with the nations that subsequently got in trouble (Greece, Ireland, Portugal and Spain, and later Cyprus). The Eurozone as a whole lowered its debt-to-GDP ratio from 72% in 1999 to 66%

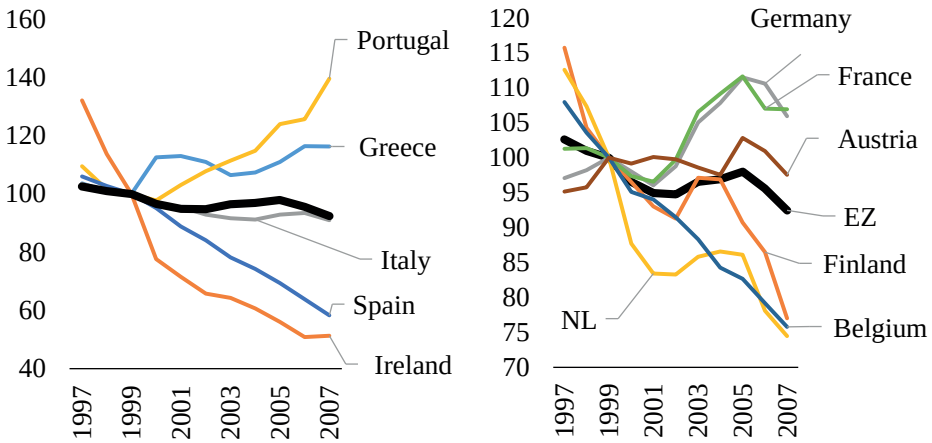
in 2007. Of course, some nations did see higher public debt ratios but others fell substantially.

- For Ireland and Spain, public debt was not a problem before the crisis.

These two were paragons of fiscal rectitude, dramatically lowering their public debt burden to far, far below the Maastricht limit of 60%. In 2007, Ireland's and Spain's ratios were, respectively, 24 and 36 percent of GDP. It should be noted, however, that both countries' government revenues were kept artificially high by tax revenues associated with a real estate boom.

Belgium, Netherlands and Finland likewise slashed their public debt piles.

Figure 4. Government debt improved for most EZ nations (1999 = 100).



Source: IMF WEO online database with authors' elaboration.

Public debt did become an issue for the other two crisis-hit nations.

- Portugal and Greece ran their debt ratios above the Maastricht limit during the calm years.

Greece's burden reached 103% but Portugal went into the crisis with a modest debt ratio of 68%. But this was not a North versus South development.

- Germany and France debt ratios drifted upwards beyond the Maastricht limit.

This was despite the sharp decline in the budgetary burden of interest payments that came with lower borrowing costs compared to the 1990s.

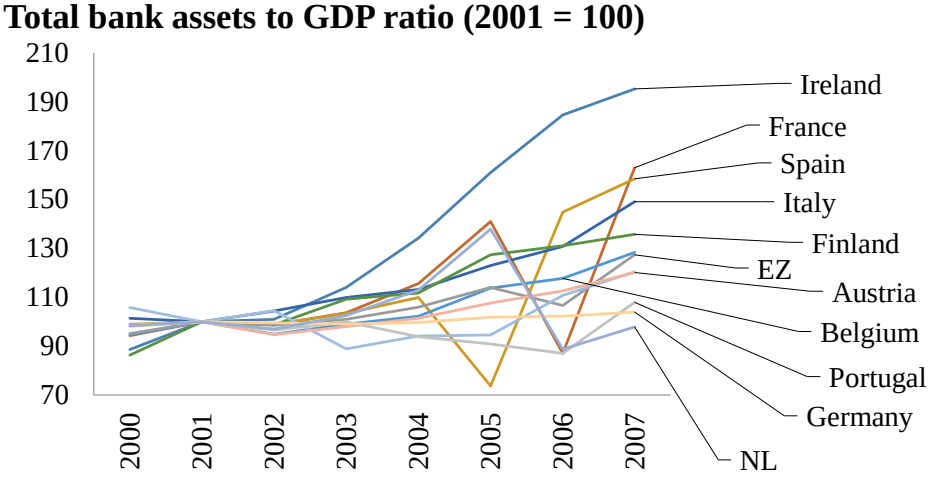
Private debt buildups

Private debt accumulation – which became a huge issue during the crisis – was run up during the heydays of the Eurozone's first decade in some EZ members.

- Ireland's total bank assets as a percent of GDP soared from 360% in 2001 to 705% in 2007;
- French bank debt rose from 229% to 373%:
- Italy's from 148% to 220%, and
- Spain's rose from 177% to 280%.

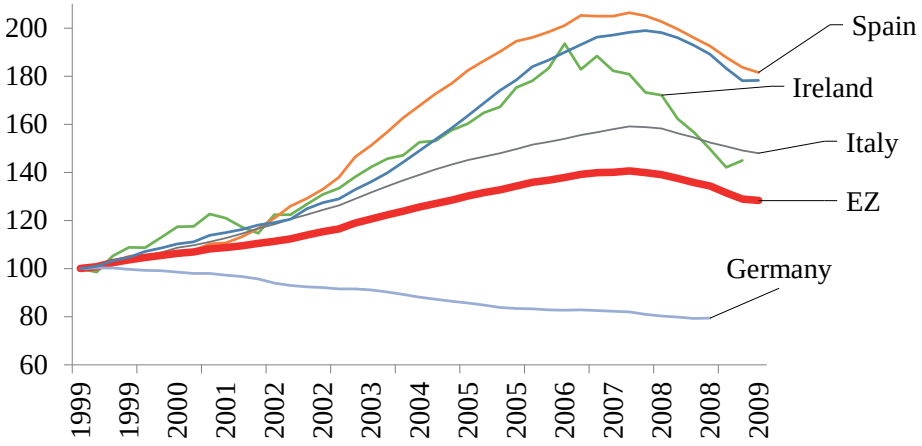
Figure 5 shows the evolution. Of course, this was not a Eurozone specific issue. It occurred in the US, the UK and other OECD nations as well.

Figure 5. Rapid accumulation of bank debt was a problem



Source: OECD online database with authors' elaboration.

Figure 6. House prices rose in the GIIPS and fell in Germany, 2000-2007



Source: OECD. House price indices in real terms. Index value in first quarter of 1999 equals 100. Adapted from Baldwin, Gros and Laeven (2010).

Much of the bank lending in Spain and Ireland was going to the housing sector. As Figure 6 shows, prices were rising steadily. The prices in Germany, by contrast, were falling thus creating what might have been a very temping opportunity for German banks flush with more loanable funds than local investment opportunities.

EZ banks' cross-border lending

We can zoom in more precisely for one particularly important form of cross-border private lending/borrowing – that of banks. Table 1: Total lending from core countries' banks into the periphery (billion euros)

shows that banks from the 'core' (Germany, France, Austria, Belgium and the Netherlands) bought very large amounts of debt from the nations that would eventually get in trouble.

Table 1. Total lending from core countries' banks into the periphery (billion euros)

	1999 4th quarter	2009 4th quarter	% change 99-2009
Portugal	26	110	320
Ireland	60	348	481
Italy	259	822	217
Greece	24	141	491
Spain	94	613	554
GIPS	204	1,212	495
Total	463	2,033	340

Note: EZ core is Germany, France, Austria, Belgium and Netherlands.
Source: Adapted from Baldwin, Gros and Laeven (2010), which draws on BIS Consolidated Banking Statistics, June 2010.

This inter-linkage among core-nation banks and periphery-nations came to be a critical piece of the puzzle as the crisis unfolded.

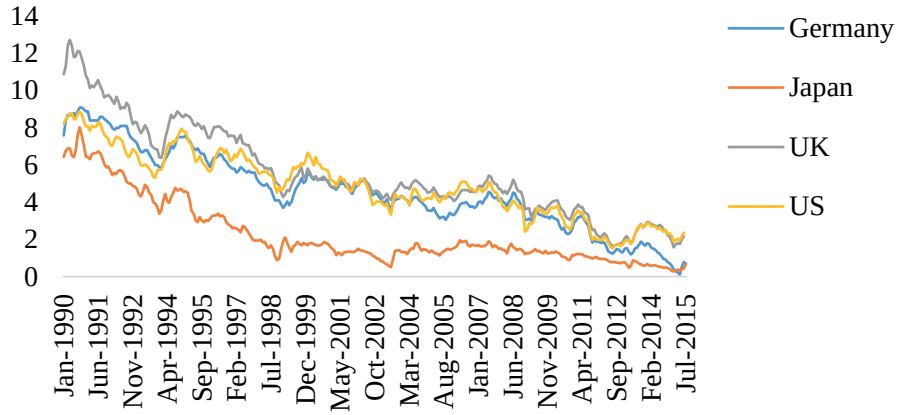
In particular, it meant that the obvious solution of writing down Greek debt would have forced the problem back onto the core-nations leading the bailout. Solving Greece's problem in the time-honoured way might well have created classic bank crises in France and Germany (much as the eventual Greek write-down sparked a banking crisis in Cyprus).

The Eurozone followed global trends

Importantly, nothing about this was unique to the Eurozone's debt accumulation.

The sum of public and private indebtedness skyrocketed in nations ranging from the US and Japan to emerging markets. This has been called the global savings glut, since the reward to holding debt fell even as its level rose. As Figure 7 shows, borrowing costs plummeted even before central banks undertook quantitative easing and other non-standard monetary measures.

Figure 7. German long-run interest rates fell in line with global trends.
% per annum



Source: OECD online database with authors' elaboration. 10-year government bond yields.

Summing up: The imbalances on the eve of the crisis

The linchpin of the EZ vulnerabilities stem from the build-up of large current account imbalances. There is nothing intrinsically wrong with such flows. If nations borrow from foreigners to invest in capacity that helps them pay off the loan, everyone can be better off. To a large extent, this was not the case. In all the GIPS, the funds ended up in various non-traded sectors.

The first column of Table 1 shows the cumulated imbalance from the euro's inception till the last year before Lehman Brothers went down in flames. The numbers for Greece, Cyprus, Portugal and Spain are enormously negative. This meant that these nations were investing far, far more than they were saving and implicitly financing it via foreign borrowing. Of course, all of this was the outcome of open markets. None of the governments (with the exception of Portugal and Greece) were involved systematically in the foreign borrowing or lending.

On the creditor side, the figures are high but not quite as high for the large core nations – Germany, France, and Netherlands. Italy, interestingly, is only modestly negative during these years at -8%.

The second column shows that for some of these nations, the inflow of foreign capital was implicitly financing budget deficits. In Greece and Portugal the large negative numbers in the first column (foreign borrowing) are matched by large negative ones in the second column (government borrowing). The large cumulative current account deficit also stand out for Spain, but it is not matched by corresponding government deficits.

Even Germany and France had cumulative public borrowing on the order of 20 percentage points of GDP over this period. Italy's was on a similar scale, although a bit higher. None of this countries however had large current account imbalances. On the surplus side, Finland and Luxembourg have unusually large numbers.

Table 2. Summary of pre-crisis imbalances

	1999 to 2007 (% of own GDP)		Bank assets (% of GDP)		%	
	Cumulative current account balance	Cumulative budget deficit	2000 to 2008 increase (p.p.)	Bank assets, 2008	Debt-GDP ratio, 2008	Excess inflation (1999-2007)
Portugal	-96	-36	44%	262%	72	7.5
Greece	-84	-47	36%	173%	109	9.9
Spain	-60	2	121%	296%	39	9.2
Ireland	-21	14	464%	783%	43	11.6
Italy	-8	-26	85%	235%	102	1.8
EZ	-2	-17	94%	335%	69	0.0
France	6	-23	180%	395%	68	-2.9
Austria	16	-19	305%	379%	69	-3.2
Germany	27	-19	18%	316%	65	-4.8
Belgium	47	-5	83%	392%	92	-1.1
Netherlands	48	-5	-9%	375%	55	2.8
Finland	61	33	101%	197%	33	-4.9
Luxembourg	98	23	-577%	2367%	14	5.5

Source: IMF and European Banking Association online data with authors' elaboration.

Plainly, a great deal of public debt was being created during the Eurozone's peaceful years. But as Figure 4 showed, the good growth during this period resulted in falling

debt burdens in most euro nations. For reference, the endpoint government debt-to-GDP ratio is shown in the final column.

The third and fourth columns of Table 2 show the increase from 2000 to 2008 in bank assets as a fraction of GDP, and, respectively, the asset-to-GDP ratio on the cusp of the crisis. The numbers are remarkable.

- Ireland's banks added almost 4 times the nation's GDP;
- Austria's banks added 2.5 times GDP.
- Spanish, Belgian and French bank assets rose by over 100%.

By 2007, many banks were not only too big to fail, they were too big to save (Gros and Micossi 2008). Ireland's banks had assets (and thus loans) worth seven times Irish GDP. The core economies were not much better with their banks holding more than twice their nation's GDP. The figures were over three times for Germany, France and the Netherlands. Luxembourg's number was astronomic.

Unnoticed build-up of imbalances

It is, ex post, surprising that the building fragilities went unnoticed. In a sense, this was the counterpart of US authorities not realising the toxicity of the rising pile of subprime housing loans.

Till 2007, the Eurozone was widely judged as somewhere between a good thing and a great thing. The rose-garden feeling, however, started to disintegrate with the fall of Lehman Brothers in September 2008. Slowing growth and heighten fear of risk soon started to tell on the Eurozone economy as a whole, but especially for those that had built up large stocks of public and private debt, or run up large current account deficits.

- Risk premiums that had been measured in basis points for years jumped up to two or three percentage points for Greece, Ireland, Italy and Portugal.

Yet as it became clear in the Summer of 2009 that the Lehman shock would not create a second Great Depression, EZ spreads declined substantially. This was not to last.

Triggers of the crisis

Every crisis has a trigger. In Europe it was revelation of the Greek deficit deceit.

- In October 2009, the newly elected Greek government announced that the previous governments had masked the true size of the budget deficit.

The true deficit was twice as large as previously announced – a whopping 12.5%.

"The Greek fiscal crisis acted as a detonator in two ways," write Stefano Micossi, "It alerted the authorities and public opinions in Germany and the other 'core' countries to the possibility of large (and hidden) violations of the common fiscal rules; and it alerted financial markets to the risk of a sovereign default in a system where the provision of liquidity to ensure the orderly rollover of distressed sovereigns is not guaranteed."

What followed was a six-month Greek effort to save itself. This failed. Greece was caught in a classic public debt vortex.

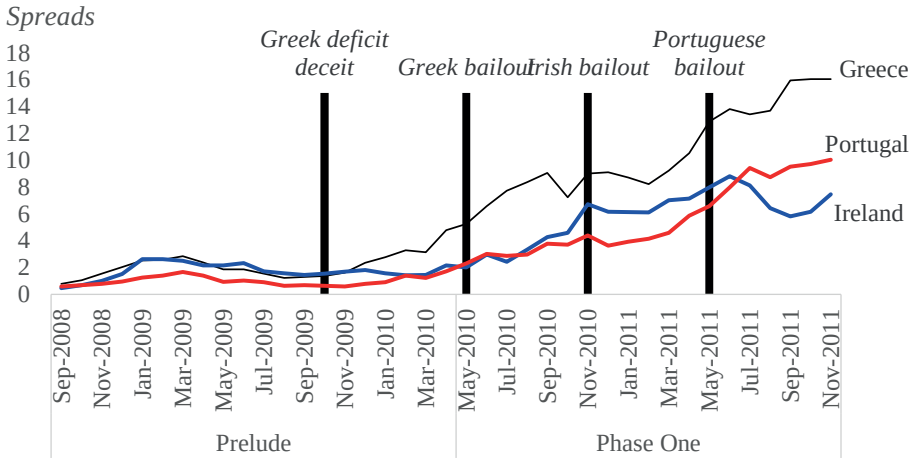
A nation's debt is sustainable when the debt burden – commonly measured by the debt-to-GDP ratio – is not rising forever. Higher debt-service costs combined with a plummeting GDP made many investor suspect that Greek debt might be unsustainable. As markets raised their estimate of Greek default risk, they demanded higher interest rates to compensate for the extra risk. Higher rates, however, raised Greece's debt-service payments, worsening the budget deficit.

In response, Greece slashed spending and raised taxes. But this backfired; it set off an austerity cycle. Since the austerity involved mostly tax rises, the belt tightening fanned a recession which reduce tax revenues and raised social spending, thus dragging the nation ever closer to the precipice of unsustainability. Credit agencies repeatedly

downgraded Greek government debt and its borrowing cost rapidly rose from 1.5% to 5%. Note that all this happened before the first bailout.

If a public debt vortex like this goes for long enough, there are only two ways to stop it: a default or a bailout by a 'lender of last resort'.

Figure 8. Prelude and Phase One of the Crisis in EZ Periphery.



Source: OECD online database with authors' elaboration. Note: The spreads are the difference between national 10-year government bond yields and those of Germany, in percentage points.

Phase One: Failed bailouts and contagion

Europe's leaders decide is was unthinkable for a Eurozone member to default, so Greece had to be bailed out. In the event, the 'lenders of last resort' were the Troika: Eurozone zone governments, the ECB and the IMF.

The rescue did not work; Greece's package was too little too late. Markets did the math and realised that Greece was not on a clear path to debt sustainability. The rushed and politically charged way in which the package was put together did nothing to bolster confidence in EZ leaders' ability to handle fast-moving crises.

- Greece's borrowing cost continued to soar (Figure 8).

But worse was to come.

Contagion in the periphery: Sudden stops

From early 2010, markets wondered whether Greece's inability to save itself might also apply to other nations. These doubts – combined with the remorseless logic of public debt vortexes – was enough to drive up the yields in other Eurozone nations.

Importantly, debt levels were not the determinant issue when it came to which nations got in trouble.

- The nations with the highest debt ratios were not the ones hit; current account deficits were what mattered.

Given the worldwide recession, all Eurozone governments were running deficits and thus having to borrow more on the markets. Only nations that relied (implicitly) on foreigner leading (i.e. were running current account deficits) faced contagion. The borrowing costs of Portugal and Ireland rose briskly once the Greek bailout was announced (Figure 8).

This was the beginning of a 'sudden stop'. Nations that relied on foreign capital to cover their savings-investment gap – Ireland, Portugal, Spain and Italy – all nations with substantial current account deficits were affected. As it turned out, Eurozone investors were far more wary about lending to other EZ governments than they were about lending to their own.

The rise in the risk premiums set in train debt vortexes that pulled down both Ireland and Portugal although via very different mechanisms. In Ireland's case, the imbalance that mattered lay in the state of its banks.

Bank debt vortexes: The 'doom loop', or 'diabolic loop'

Banks, like nations, can be subject to debt vortexes. Banks borrow money short-term to lend it out long term. For each euro borrowed short term, the bank makes long-term loans of a dozen or more euros – this is called leverage. It is as profitable in good times as it is dangerous in bad times.

What puts the 'bank' in bankruptcy is the fact that banks go broke any time their short-term funders refuse to rollover the short-term funding. Banks, in other words, operate with a business model that would look financially irresponsible in any other sector. The whole thing only works since people believe that the banks can be rescued by a 'lender of last resort' – typically the national government or national central bank.

Yet two critical differences make systemic banking crises extremely pernicious: leverage and maturities.

The average Eurozone nation had a debt stock of about 70% of GDP going into the Crisis. EZ banks were holding vastly larger debts. In 2007, Irish banks held debt equal to 700% of the entire countries GDP. Plainly a systemic banking crisis in Ireland could – and in fact did – bring down the whole nation.

Moreover, the maturity of bank borrowing is typically much shorter than that of nations, so the need for new funding is radically more pressing. A typical Eurozone government may have to seek fresh loans to cover, say, 10% of its outstanding debt per year. A typical Eurozone bank has to seek fresh loans worth 10% or more of its total debt on a daily basis.

This daily need for billions means that the vortex – once it gets going – can accelerate at a frightening pace. During the Lehman Brothers debacle, one bit of bad news – Lehman's default – brought the entire US credit market to a halt within hours; it spread to the rest of the world within days.

The 'doom loop' is closed by the fact that the banks – who view their national government as their lender-of-last resort – are also major lenders to the governments. The rescue, in essence, could require the rescuers to borrow from the rescued. This is how Ireland went down.

Irish banks got in trouble in 2010 and the Irish government bailed them out. In this way, private debt imbalances became a public debt imbalance.

- Despite having a very low debt-to-GDP ratio going into the crisis, this extra dollop of debt – together with the fear in the markets – pushed Ireland over the sustainability edge.

Like a tragic double-drowning, Ireland's banking system went down first, and the government of Ireland went down trying to save it. The Irish bailout was signed in November 2010. This was the Eurozone's first example of the doom-loop linking bad bank debt to national solvency.

Ireland's bailout package did little to calm investors' fears. The borrowing costs of Greece, Portugal and Ireland continued to rise. As with the Greek bailout, the Irish bailout saved the day but worsened the crisis.

By the time of the Portuguese bailout in May 2011, markets were demanding 16% for holding Greek bonds – a ruinous level even for nations in good economic shape. The Greek economy, however, was collapsing. After contracting about 5% in 2009 and 2010, it crashed by almost 9% in 2011.

In July 2011, the second Greek package was agreed in principle, but one of its elements enflamed the overall situation. As part of the EZ leaders' new view that the private sector should bear part of the cost of the bailout, private holders of Greek government debt would see about half the face value of investment disappear in what was called Private Sector Involvement (PSI). This was a wake-up call for investors who still believed the Maastricht Treaty's no-default clause.

Seeing private investors explicitly having to write down EZ government debt, and seeing how EZ leaders seemed unable to put the crisis behind them, markets drew the natural conclusion that holders of the debt of other EZ nations might also be forced into a write down.

Markets, already leery of lending across borders, became even more reluctant. Portugal, who had borrowed (via the current account) 10% of its GDP abroad in 2009 and 2010, was the next to suffer a sudden stop. Its bailout was signed in November 2011.

Once again, the bailout saved the day but worsened the crisis. After a brief respite, Irish and Portuguese rates continued their ascent towards levels that would bankrupt almost any nation. But worse was to come.

The three countries hereto caught in the crisis were small and their debts were insignificant compared to the overall EZ output. Worries started to mount when markets started demanding higher rates for the government bonds of Belgium, Spain and Italy. Italy in particular was a mortal threat to the Eurozone given the size of its economy and its massive debt.

Phase Two: Contagion spreads to the core

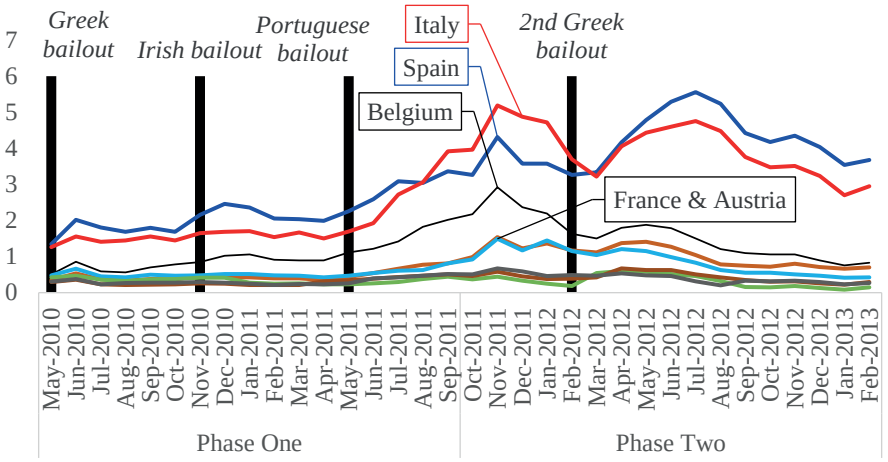
'Phase Two' of the Eurozone crisis had started. As IMF Chief Christine Lagarde candidly put it: "Developments this summer have indicated we are in a dangerous new phase" (Lagarde 2011).

Repeated attempts at getting ahead of the curve failed, giving rise to a general suspicion that the Eurozone crisis might spiral out of control.

- Nations that had previously been consider safe investments were now feared to be potential defaulters; borrowing costs started to move in ways that threatened to validate the fears.

This self-feeding aspect is one feature of the crisis that is both essential and elusive as it rests on perceptions.

Figure 9. Phase Two: Contagion spreads to the EZ core



Source: OECD online database with authors' elaboration. Note: The spreads are the difference between national 10-year government bond yields and those of Germany, in percentage points.

Self-feeding panic: Good equilibrium, bad equilibrium

When investors started to lose confidence in Italy – a trend which was not helped by its volatile political situation – they sold Italian government bonds in an effort to avoid future losses. These sales pushed interest rates up, making it harder for Italy to fund the rollover of its debt at reasonable rates. Seeing the funding difficulties, markets demanded higher interest rates and the spiral continued. In this way, a liquidity crisis (i.e. difficulty in rolling over debt) can – all on its own – become a solvency crisis. It's a matter of expectations.

A good way to think of this is as there being two equilibrium situations. In the first, the 'good equilibrium', markets believe Italy is solvent and thus are willing to rollover Italy's debt at reasonable rates, so Italy stays solvent. This was the situation up the beginning of Phase Two. In the second, the 'bad equilibrium', markets suspect Italy

is insolvent and thus demand interest rates that make Italian debt unsustainable – thus confirming their suspicions.

Private sector involvement

The botched Portuguese bailout and EZ leaders' inability to get ahead of the curve seems to have switched Europe from the good equilibrium to the bad one. It is impossible to know why markets think what they do, but many point to the 50% 'haircut' that was a pre-condition for Greece's second bailout.

By insisting that private holders of Greek debt lose money, Eurozone leaders transformed fears of losses into real losses. Any lingering belief that default was impossible inside the Eurozone were erased. The thought foundations of the pre-Crisis imbalances in public, private and cross-border debt were shattered. The consequences were not long in coming.

The massive pre-2008 lending across EZ borders had exposed banks in the core to debt in the periphery. In early October 2011, a Franco-Belgian bank, Dexia, was pushed into a bank-debt vortex by worries over its exposure to Greek government debt. It was nationalised by Belgium by month's end. Fearing an Irish-like end to the story, the sudden stop started to drive up Belgian interest rates. Belgium had, by this point of the recession, turned from a net creditor to foreigners into a net borrower (it was in current deficit from 2008).

Given Spain's large bank debt and collapsing property markets, similar worries had begun to spread to Spain since the Portuguese bailout. Events in Belgian accelerated the process.

Italian yields also soared, but not due to bank problems. With a debt-to-GDP ratio over 100%, Italy needed both good growth and reasonable borrowing costs to stay afloat. It was vulnerable to a sudden stop since its implicit reliance of foreign investors

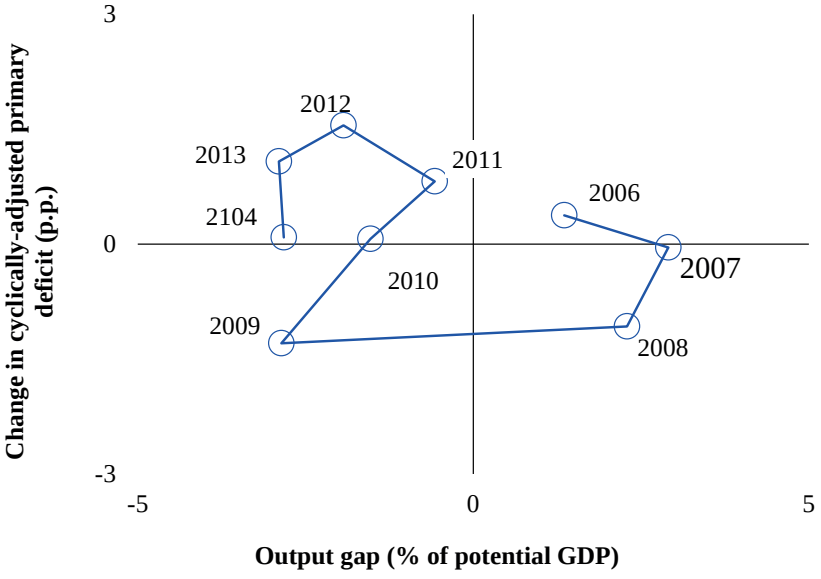
rose steadily during the crisis with its rising current account deficit. Italy, in short, was coming down with the sudden-stop disease.

Sharp actions by national governments calmed the waters for a few months, but attempts to switch investors' from the bad-equilibrium expectation to the good-equilibrium expectations failed. It all started up again when after the second Greek bailout once again disappointed markets.

Pro-cyclical fiscal tightening

The Great Recession produced counter-cyclical fiscal policy via the usual automatic stabilisers – falling tax receipts and rising social spending. This surely dampened the shock and prevented the Great Recession from becoming the second Great Depression.

Figure 10 Fiscal policy turned pro-cyclical from 2010.



Note: General government primary net lending/borrowing (billion EUR).

Source: IMF WEO online database with authors' elaboration.

From 2010, however, the fiscal policy stance flipped from stimulus to contraction, as Figure 10 shows. The Eurozone as a whole saw its 2010 primary deficit move from about

minus €350 billion in 2010 to €10 billion in 2014. This was a massive contractionary shock – equal to 4 percentage points of the monetary union's economy.

The tightening by the GIIPS was unavoidable as they were either in bailout packages that prescribed fiscal tightening, or they were doing the tightening themselves to evade the debt-vortex.

- The GIIPS accounted for 48% of the fiscal swing even though they account for only a third of the EZ GDP (Table 2).

The effects on the economy were amplified by the fact that most countries achieved the tightening mostly by raising taxes; cutting public spending would have been less contractionary (Alesina et al 2015).

Table 2. Pro-cyclical fiscal policy, 2010 to 2014

	% of own potential GDP	bill EUR	%	%
	2010 to 2014 swing	2010 to 2014 swing	Share of EZ swing	Share EZ 2014 GDP
Greece	7%	14	4%	2%
Ireland	28%	49	14%	2%
Italy	2%	28	8%	16%
Portugal	9%	17	5%	2%
Spain	5%	53	16%	11%
EZ	4%	340	100%	100%
Austria	1%	2	1%	3%
Belgium	0%	2	0%	4%
Finland	0%	0	0%	2%
France	2%	46	13%	21%
Germany	4%	108	32%	29%
Luxembourg	1%	1	0%	0%
Netherlands	2%	15	5%	6%

Source: IMF WEO online database with authors' elaboration.

The economic impact of the crisis was also made worse by tightening in the core nations who were not suffering from the sudden stop. As Guido Tabellini puts it: "When hit by a

sudden stop, domestic fiscal policy has no option but to become more restrictive, and a credit squeeze cannot be avoided as domestic banks are forced to deleverage. To avoid a deep and prolonged recession, active aggregate demand management at the level of the Eurozone as a whole is required. But this did not happen."

- Tightening by Germany accounted for 32% of the EZ's overall tightening. France's austerity amounted to 13% of the EZ total.

Denouement

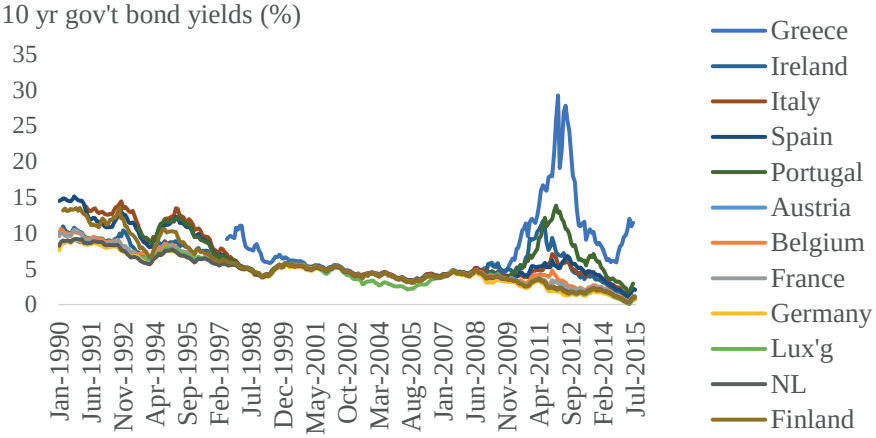
Things were plainly going from bad to worse. Each attempt to end the crisis seemed to make matters worse.

By this time, the contagion spread all the way to France. Its debt was downgraded and market yields rose substantially above those of other 'core' EZ nations like Germany and the Netherlands. British Prime Minister Gordon Brown unhelpfully suggested that Italy and France might need a bailout. The Belgian problem – domestic banks in trouble due to Greek lending – spread to Cyprus. Its banks were severely affected by the Greek debt write down, so the nation asked for a bailout in June 2012 (granted in March 2013).

Draghi's "whatever it takes"

Needless to say, a crisis that threatened Italy and France was a crisis of global dimension. This was no longer an issue of Greece fiddling the books to pay for the Olympics – this had the potential of blowing up the Eurozone and the possibility the EU itself. The world economy was looking at another Lehman-sized shock. With EZ leaders manifestly incapable of mastering events, something had to be done.

Figure 11. Yields converged again after Draghi's intervention.



Source: OECD online database with authors' elaboration.

That something was a forceful intervention by ECB President Mario Draghi in his famous July 2012 speech. He told markets that the ECB would do "whatever it takes" to keep the Eurozone together. That did the trick. It switched expectations from 2011 and 2012's doom-is-inevitable back to the old we-will-get-through-this-thing expectations of 2009 and 2010. Borrow cost returned to pre-Crisis levels (Figure 11).

The basic switching mechanism that Draghi triggered is a a direct corollary of the debt-vortex logic. The rush to unload debt is driven by fear. The fear is driven by the suspicion that everyone else will sell the nation's debt, thus driving borrowing costs up to the point where the nation actually goes broke. But if there is a debt buyer-of-last-resort – someone who can buy unlimited amounts of debt – the suspicion dissolves and investors are happy to hold the debt. This is what Mario Draghi did in the Summer of 2012. So far it has worked.

Even in Greece, things seemed to be getting better. In April 2014, Greece successfully sold new debt on the open market at reasonable rates and the economy appeared to be recovering slowly. The election of the far left Syriza coalition threw things off track. Whether the Greek government's stance was justified or not (our authors disagree), the

outcome is indisputable. Borrowing costs soared back to levels that made Greek debt unsustainable.

Causes of the crisis

The proximate cause of the EZ crisis was the rapid unwinding intra-EZ lending/borrowing imbalances that built up in the 2000s. Some of this was to private borrowers (especially in Ireland and Spain) and some of it to public borrowers (especially in Greece and Portugal), but in every case the difficult debt mostly ended up in government hands. As Thorsten Beck and José-Luis Peydró put it: "Often this private over-indebtedness ends up on governments' balance sheets, so that the rise in public debt is more a consequence than a cause of a financial crisis."

This 'sudden stop' was a crisis rather than a problem since EZ members could not devalue and their central banks could not bail out the government. As Paul de Grauwe writes: "Countries that have their own currency and that are faced with such imbalances can devalue or revalue their currencies." This was not an option for the GIIPS.

Causes of the causes

The causes of the crisis – imbalances and lack of crisis management mechanisms –tell us that there are really three sorts of underlying causes:

- Policies failures that allowed the imbalances to get so large;
- Lack of institutions to absorb shocks at the EZ level; and
- Crisis mismanagement.

Some of these failures involved unanticipated events. Others were a failure to implement the provisions agreed in the Maastricht Treaty.

At one level, all these causes stem from a fundamental design flaw, emphasised by Feld et al. The key deficiency was the misalignment between accountability and authority, or

as Feld et al put it, the "divergence of liability and control". If the control and liability had been supranational – as it is in US's monetary union – the imbalances could surely have been handled without provoking a continent-wide economic crisis. It is much more likely that at least the public debt run up would have been not allowed to go so far in Greece. Likewise, if control and liability had been effectively unified at the national level, nations would have had to deal with their own debt problems, perhaps with the help of the IMF. This might also have prevented or reduced some of the pre-crisis build-ups, as happens among US states (most of whom have balanced budget clauses in their state constitutions).

Paul de Grauwe elaborates on the dire consequences of divorcing authority and accountability. "When the Eurozone was started, a fundamental stabilising force that existed at the level of the member-states was taken away from these countries. This is the lender of last resort function of the central bank." EZ governments, "could no longer guarantee that the cash would always be available to roll over the government debt." Unlike stand-alone nations, EZ members did not have "the power to force the central bank to provide liquidity in times of crisis."

This created a fundamental fragility in the monetary union. Without a buyer-of-last-resort, shocks that provide re-funding difficulties in banks or nations can trigger self-fulfilling liquidity crises that degenerate into solvency problems.

At an even deeper level, Elias Papaioannou stresses the differences in national institutions as the bedrock source of problems. "Somewhat paradoxically, the criteria for joining the euro did not touch upon key institutional issues, related to state capacity (tax collection), property rights protection, investor rights, red tape, and administrative-bureaucratic quality. The high growth during the convergence period came mostly from increased investment and some limited reforms, mostly on banking and monetary policy stability." The Maastricht criteria failed, he asserts since they focused on nominal targets rather than the fundamental institutions that are source of divergences in the first place.

Allowing the imbalances to get so large

- As discussed, the imbalances involved public and private debt as well as cross-border borrowing and lending.

Failure to bring national debt under 60%

The Maastricht Treaty assigned monetary policy to the ECB. The Bank was made politically independent and instructed to maintain price stability. This worked. Fiscal policy was a different matter.

Many warned that a monetary union without a fiscal union would be problematic as EZ members might run up unsustainable debts that would either lead to pressure on the ECB to inflate it away, or to pressure on members to bailout an insolvent member to avoid the fallout from a sovereign default.

Ultimately, fiscal union was viewed as politically unrealistic so it was left to member governments. Three safeguards were put in place to prevent problems:

- The Stability and Growth Pact was to keep deficits below 3% of GDP in normal times, and debt levels below, or at least heading towards, 60% of GDP;
- The ECB's independence was to protect against political pressures to inflate away debt, and the ECB was explicitly forbidden from financing members' deficits; and
- The no-bailout clause was to protect against the pressure to bailout failing EZ members.

During the pre-crisis years, the SGP failed. As Feld et al write: The SGP "sanctioning mechanisms were barely employed; there were 34 breaches of the 3% threshold for the general government deficit between 1999 and 2007. … The breaches of the pact by Germany and France set particularly detrimental precedents."

Failure to control excessive bank leverage

Many Eurozone banks were dangerously overleveraged going into 2010 due to regulatory failures before 2007, and half-hearted bank clean-ups after the Global Crisis. The responsibility for bank regulation was, as with fiscal policy, left to EZ member states, but there was no SGP for banking.

Banking supervision was not really a focus of the 1990s discussion leading up to the Maastricht Treaty. Coordination of banking rules was at best mentioned in passing in the 1990s and few thought of moving deposit insurance, supervision, or bank resolution to EZ level.

National central banks in both the surplus and the deficit countries -- which at the time still in charge of local banking supervision -- failed to realise what the huge intra-EZ credit flows were financing.

Lack of institutions to absorb shocks

The public and private debt problems interact in a deadly embrace called the doom loop. This is a cause of the sudden stop and crisis contagion in the sense that it opens the door self-fulfilling crises. It makes the monetary union vulnerable to shocks that get amplified all out of proportion even if the debt imbalances are not extreme.

The problem, as Daniel Gros writes is that “In Europe the banks and the sovereign are usually so closely linked that one cannot survive without the other.” As discussed above in the context of the doom loop, EZ national governments are the ultimate guarantor of their banks, but the banks are key holders of public debt. As a result: “insolvency of a government would also wipe out the capital of the banks and bankrupt them as well. But an insolvent government would no longer be able to save its banks.”

The key element in this doom loop is that banks hold large amounts of the debt of their own government. If banks instead held more diversified portfolios of public debt, there would be much less doom in the doom loop.

The problem this creates, according to Agnes Bénassy-Quéré, is that it makes sovereign default very difficult. "The risk is that a sovereign default could trigger bank insolvency. The latter would then trigger a liquidity crisis since insolvent banks cannot get refinancing within the lender-of-last-resort procedures. To avoid a collapse of the national economy, there would be no other way than to re-introduce a national currency to refinance the banks." This was a real possibility for Greece during its Summer 2015 crisis.

Beatrice Weder di Mauro illustrates the problems created by the inability to deal with insolvent EZ members. "Although Greece is extreme in many ways, it has repeatedly highlighted the European failure to establish a regime for dealing with cases of unsustainable debt. After the no-bail out clause failed to prevent excess debt accumulation, the Eurozone had to find a quick fix when Greece lost market access in 2010."

Lack of collective action mechanisms

The risks of credit imbalances can be diminished by surveillance and avoiding the accumulation of excessive imbalances. But it will never disappear. As Paul de Grauwe says, a fundamental feature of a capitalistic system "is that it is characterised by booms and busts; bubbles and crashes."

If a sudden stop occurs, the sovereign most likely will lack the fiscal resources to cope with it. The size of the financial sector has grown just too large: at the end of 2007, bank assets were several multiple of GDP in most EZ countries (Table 1). Unlike a typical country hit by a sudden stop, an EZ member cannot devalue its currency to cope with

the crisis. Yet, as became crystal clear in Greece but also in other countries of Southern Europe, currency risk is a major concern for market participants.

During a sudden stop, the bank-sovereign loop that we have seen at work during the crisis becomes inevitable. The home bias of bank portfolios aggravates the loop. But in the presence of currency risk, even a bank with well diversified assets would not be able to withstand the flight to safety of its depositors. And the sovereign would typically not be in a position to help, given that it cannot devalue nor print money.

In countries with high public debt the sovereign itself could be the primary source of fragility, and its exposure to debt runs could activate the bank-sovereign loop. Any country with a large public debt, and with no access to monetary financing, could be subject to a run on its debt, even if it was solvent in the long run. In other words, a liquidity crisis triggered by lack of confidence could push into insolvency not only banks, but also sovereigns with high public debts and no access to the printing press.

By the end of the acute phase of the crisis, Spain was able to borrow from an EZ-level institution to fix its banks. This was a major improvement over the situation faced by Ireland at the start of the crisis. But the funds lent by the ESM did not go directly to Spanish banks, increasing their capital. They were borrowed by the Spanish government, which in turned used them to increase bank capital. The outcome was a further increase in sovereign debt.

Failures in crisis management

The EZ crisis was mismanaged on many levels. When it came to the firefighting moment, it is puzzling that, as Beck and Peydro state: "European policy makers decided not to draw on the extensive crisis resolution experience in and outside Europe, a decision which has led to substantial number of policy mistakes."

Charles Wyplosz provides the response: "The simple answer to these questions is that the European treaties never anticipated that there could be such a crisis." He continues

by judging that: "politicians have reluctantly been led to micromanage complex technical issues as the result of an amazing accumulation of economic mistakes, which they are unwilling to recognise."

The lack of clear lines of liability and control caused problems for crisis management. As Giancarlo Corsetti writes; "Instability grew out of a disruptive deadlock between national governments forced to address and correct fundamental weaknesses in their national economies on their own, and the EZ-level policymaking, which could have created the conditions for successful implementation of national policies, but did too little, too late (at best)."

This lacunae was on fully display in Summer 2015. Despite repeated debt restructuring, the economic fallout from this year's long-lasting negotiations between Greece and her creditors has probably made the nation insolvent. According to the IMF Greek debt is unsustainable without further restructuring.

More specifically, when Greece got into its sovereign debt crisis in 2010, the standard solution would have been for Greece to turn to the IMF for help. But, as Jeff Frankel writes: "the reaction of leaders in both Frankfurt and Brussels was that going to the IMF was unthinkable, that this was a problem to be settled within Europe. They chose to play for time …". This turned out to be a critical mistake.

When it became clear that the Irish banks were in trouble, no EZ structures existed to facilitate a collective rescue. In this sense, the policy mistake was not having anticipated the problems that would arise when the responsibility for banks was with nation governments but the capacity to bailout them was only at the EZ level.

While there were important mistakes made in crafting the bailout packages, this is not the place for detailed critiques. Nevertheless common problems came in the sequencing of reforms and a general lack of national ownership of the credit-for-reform deals. In retrospect, it is also clear that it was a mistake to not write down more of Greece's debt early on when most of the debt was still held by private creditors. As Frankel writes,

private debt holders: "could usefully have taken a 'haircut,' in a way that public sector creditors cannot … But again, leaders in both Frankfurt and Brussels insisted in 2010 and 2011 that writing down the debt was unthinkable."

Some of the 'mistakes' were in fact linked to deeper conflicts. As Philip Lane stresses, the creditors and debtors in the bailout packages share a common currency and are deeply intertwined in terms of economic and political linkages. This inevitably creates conflicts of interest when it comes to the design of the bailout programmes and the potential role of debt restructuring mechanisms.

Failure to understand the monetary union regime

EZ governments systemically failed to understand the regime change implied by adoption of a common currency. A key aspect of this was the implication of financial integration. The thinking in the 1980s and 1990s, when financial integration was introduced before the common currency, was that it would contribute to both convergence and macroeconomic stability. Instead, capital flows tended to feed non-tradable sectors in the periphery of the Eurozone. Second, financial integration did not play as a smoothing device when the crisis hit. Quite the opposite, crisis countries suffered sudden stops.

In this same line is the idea that the Eurozone was as a whole a large but fairly closed economy, while EZ governments continued with the mindsets of small open economies – each ignoring the impact of their own actions on the situation faced by the collective.

Some remedies

The goal of this eBook is to establish a consensus on the causes and a narrative for the EZ crisis. The idea is to agree what happen as a first step towards developing a consensus on what should be done to fix the current problems and to create mechanisms that will make the next crisis less damaging.

Although the main focus of this eBook is the analysis of what happened trying to see if there is a common narrative, some authors did not refrain from suggesting how the monetary union should be reformed. Here proposals vary and understandably is harder to find a common theme.

Guido Tabellini stresses the need to develop shock absorbers at the EZ level. Referring to the classic macroeconomic trilemma (the Eurozone cannot have full financial integration, financial stability and no common fiscal policy), he writes: "This trilemma implies that, in order to preserve financial integration and avoid future crisis, we need adequate common fiscal resources to cope with both systemic banking crisis and sovereign debt runs."

He also stresses the need for a remedy to the tendency of EZ members to go for pro-cyclical fiscal policy. "This aggregate demand mismanagement was not just the result of human error. It reflects the institutional design of the Eurozone." His solutions would surely attract disagreement from other authors. "These institutional features that led to this mismanagement ought to be corrected by changing the mandate of the ECB, by removing the constraints on monetary financing in order to facilitate a coordinated monetary and fiscal expansion, and by endowing the Eurozone with the possibility of issuing and servicing its own debt."

A fresh solution to the difficulties of adjustment with a fixed nominal exchange rate is suggested by Pesenti. The idea is that structural reforms make it possible to substitute relative price changes with shifts in the composition of output. But setting up firms and new production lines is costly and typically requires financial resources. Structural reform cannot succeed without appropriate policies that address tight credit constraints on investment and firms' activity due to liquidity and balance sheet problems hitting banks. We no longer have a dichotomy between costly reforms and anti-recessionary monetary policy, but rather an integrated and perhaps coordinated vision of monetary and structural policies to restore growth. The alternative, unattractive, option is

continuing reliance on deflationary adjustment in a currency union stuck at the zero lower bound.

Beatrice Weder di Mauro stresses the legacy debt as the core fragility that must be eliminated if any solution is to work. Referring to a report she helped write earlier this year that accepts the no-mutualisation red line as a given, she writes: "Corsetti et al (2005) have proposed an alternative approach for a rapid and concerted debt reduction. The proposal involves an agreement by all Eurozone countries to commit future revenues for the sake of retiring debt. They would bring forward current and future income streams and commit their net present value to buy back the national debt now. Capitalising even small current and future income streams over a long horizon generates in net present value terms a large sum of money to buy back the debt. In addition, elements of solidarity and a debt equity swap could make the debt reduction deal viable and equitable."

"The aim of the debt reduction deal is to eliminate legacy public debt, bringing debt in countries (expect Greece, which is a special case), below 95 percent and thus plausibly into the zone of solvency."

"The second pillar of the proposal is a regime to deal with cases of unsustainable sovereign debt, which would help prevent countries from becoming too big to fail, again."

Concluding remarks

When Europe's Economic and Monetary Union (EMU) was being designed in the late 1980s, there was no clear vision on the standards of political and institutional cohesion among members that would be required to make the project viable. "The consensus view was that the member states of the union would be able to reach agreement and cooperate on how to create the common currency institutions over time," as Giancarlo Corsetti put it. Euro nations would be able to muddle through any problems.

Although shocks would create fault lines and policy conflicts, it was widely expected that the cooperation would prevail – as it had always done before. The historical importance of tying together Europe would provide sufficient motivation to overcome obstacles, smooth differences over policy, and elicit solidarity.

And the need for further changes was quite clear. For example, CEPR's Monitoring the ECB report (Begg et al. 1998) wrote: "The ECB suffers serious faults in its design that sooner or later will surface. This is likely to happen when large shocks, such as the world financial crisis, hit euroland," where the world crisis referred to here was the 1997 Asian Crisis. "The lack of centralised banking supervision, together with the absence of clear responsibilities in crisis management, risk making the financial system in euroland fragile. No secure mechanism exists for creating liquidity in a crisis, and there remain flaws in proposals for dealing with insolvency during a large banking collapse. … These design faults are due to a failure to put sufficient decision making power at the centre of the system."

Europe's bad luck exposed the costs of relying on Monnet's view. Shocks the size of the Global Crisis and Great Recession were not really what the Eurozone's architects had in mind when they thought they could rely on muddling-through. From 2010 to 2012, Monnet's logic was turned on its head. Discussion of how to complete the currency union proved divisive and destabilising. It made matters worse and a consensus had to be reached on institutional issues while knitting together agreements on immediate emergency measures.

The consequences were and still are dreadful. Europe's lingering economic malaise is not just a slow recovery. Mainstream forecasts predict that hundreds of millions of Europeans will miss out on the opportunities that past generations took for granted. The crisis-burden falls hardest on Europe's youth whose lifetime earning-profiles have already suffered.

Money, however, is not the main issue. This is no longer just an economic crisis. The economic hardship has fuelled populism and political extremism. In a setting that is

more unstable than any time since the 1930s, nationalistic, anti-European rhetoric is becoming mainstream. Political parties argue for breaking up the Eurozone and the EU. It is not inconceivable that far-right or far-left populist parties could soon hold or share power in several EU nations.

Many influential observers recognise the bind in which Europe finds itself. A broad gamut of useful solutions have been suggested. Yet existing rules, institutions and political bargains prevent effective action. Policymakers seem to have painted themselves into a corner.

This eBook is a first step in a bigger project called "Rebooting Europe". It seeks to marshal a critical mass of Europe's best thinkers in developing ways to get Europe working again. To undertake a systematic rethink of today's European socio-economic-political system. In short, to figure out a way to update Europe's 'operating system' and reboot.

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Five years of crisis (resolution) – some lessons

Thorsten Beck and José-Luis Peydró
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The past five years have given European countries useful insights on what works in crisis resolution. The lessons should be viewed as forward-looking contributions to the institutional and policy reform agenda in Europe, especially in the Eurozone. The Eurozone is not doomed, it just needs better economic and financial policies.

The past five years have given useful insights on what works and what does not in crisis resolution. Several Eurozone countries went through deep, persistent financial (and economic) crises, caused not only by bad crisis management policies, but mainly by a pre-crisis debt boom.

- Sovereign public over-indebtedness (Greece);
- Real estate private credit bubbles (Ireland and Spain); and
- Current-account imbalances (Portugal, and also in Spain and Ireland, where the credit and real estate price bubbles were in great part financed by foreign liquidity).

More often than not, European policymakers decided not to draw on the extensive crisis resolution experience in and outside of Europe, a decision which has led to substantial number of policy mistakes.

It would be wrong, however, to say that any negative outcome could be explained by policy mistakes. Post-crisis, countries have to go through (often severe) readjustment

periods, often with distributional repercussions. Nevertheless, the experience over the past five years allows lessons to be drawn. While economists pointed out pitfalls beforehand, these lessons definitely benefit from hindsight and should thus not be perceived as knee-jerk 'told-ya' reaction.

The lessons should be viewed as forward-looking contributions to the institutional and policy reform agenda in Europe, especially in the Eurozone. The Eurozone is not doomed, it just needs better economic and financial policies.

Looking beyond fiscal policies

The Maastricht criteria for entering the Eurozone focused on fiscal and monetary policy conditions. As most observers agree, the Maastricht criteria to enter the currency union were too narrowly focused on public sector debt (and were often ignored anyway, including in Germany and France in the early 2000s, and especially bad in the case of Greece).

The Fiscal Compact is a broader approach, but still seems too much focused on fiscal policy. History, and also the Global Crisis starting in 2007-08, suggest that the main determinant of systemic financial crises with strong and persistent negative aggregate effects is a pre-crisis build-up of private leverage. This was the case of Ireland and Spain before the Global Crisis. Such run-ups are normally accompanied by asset prices bubbles, especially in real estate. Often this private over-indebtedness ends up on governments' balance sheets, so that the rise in public debt is more a consequence than a cause of a financial crisis.

- This makes it clear that there have to be better limits on both ex ante build-up of private and public leverage, especially if used for real estate.

Examples include building empty airports in Spain and preparing for the Olympic Games in Greece. Europe suffered from a lack of any limits on build-up of private

leverage prior to the Crisis, and in general from the lack of macroprudential policies that limit systemic risk (Freixas et al. 2015).

- Public and private leverage limits are especially important in good times, when incentives are stronger and more pernicious in the build-up of excessive risk; and
- The limits have to be softer in bad times when some relaxation may help economic recovery, as fiscal multipliers are greater in crisis times and issuing equity in crisis times is more costly for private agents.

Convergence in a currency union, therefore, cannot be purely on fiscal grounds; however, it cannot even be on current-account grounds alone, though credit booms were mainly financed with foreign debt, which implied strong internal Eurozone imbalances.

Importantly, convergence also has to happen on the institutional level. Devaluation of a currency allows a strong internal coordination mechanism to reduce overall local prices in a country with respect to foreign products and services, which was the typical way for periphery Eurozone countries to get out of economic recessions in the past.

- Rigid external prices in a currency union should imply substantially more flexible internal prices and flexible labour, service, and product markets that allow adjustment to external shocks.

In fact, a key argument in favour of peripheral countries to adopt the euro was that the only way to go out of a crisis would be with a more flexible, competitive economy through structural reforms.

Sadly, the substantial lower risk premia – and thus lower costs of borrowing – that came with the euro implied strong booms but too little economic reforms in the periphery countries. The case of Greece has especially shown the need for such flexible markets (the same in e.g. Spain, but here the labour market has been partly liberalised after the onset of the Crisis). Greece went into the Crisis with rigid internal price structures and no option to adjust external prices, which ultimately exacerbated the impact of fiscal retrenchment beyond that predicted by normal-times fiscal multipliers.

While the adjustment programmes involving private and public deleveraging in several other periphery countries were painful but relatively successful, the programme in Greece failed, which can thus be (partly) explained by deep structural rigidities. This lack of reforms could be due to the deep links between the Greek political elite (PASOK and ND) and the economic elite, which has benefitted enormously from corrupt and inefficient government structures. Similarly, the clientelistic nature of Greek politics (jobs and/or economic rents for electoral support) prevented the previous government from implementing reforms that would ultimately undermine this system.[1]

Restructuring – done correctly

Since debt is in general not state-contingent, it results in too much ex-post liquidation and insufficient risk sharing across borrowers and lenders, and has some moral hazard problems such as debt overhang and risk shifting. These problems are even worse in the Eurozone countries as debt is written in euros, which is not controlled by the local governments and central banks (opposite to e.g. the US and the UK), and is especially short-term (and thus very fragile) to weak borrowers, as e.g. banks or the periphery sovereigns.

Ex post restructuring is thus necessary in some circumstances to reduce the huge ex post-crisis costs, and this is even more necessary in the Eurozone, given the lack of other adjustment risk-sharing mechanisms such as fiscal union and loss of monetary sovereignty. Going into the Crisis, Europe had few, if any, restructuring mechanisms in place. Europe has made progress in establishing resolution mechanisms for banks, including stronger capital requirements and bail-in rules, as well the beginning of a banking union to cut the links between weak banks and weak sovereigns. These reforms come in the wake of mistakes done during the Crisis, such as guaranteeing too many bank liabilities with taxpayers' money (e.g. in Ireland, Spain or Greece).

1 An illustrative example is the problems faced in Greece by Andreas Georgiou, the technocrat in charged with running the Greek statistics office who showed the real public fiscal deficit that Greece truly had. See http://www.wsj.com/articles/deficit-drama-greek-authorities-step-up-probe-against-statistics-chief-1427060060.

There has been little restructuring, on the other hand, in the household sector. In the US with most states with non-recourse mortgage loans and bankruptcy procedures for households, the deleveraging process has been much faster via defaults and the restart in growth therefore relatively quicker by alleviating debt problems. This part has been missed in Europe, though there have been improvements, as for example in Ireland during this Crisis (or in Sweden in the 1990s). For non-financial firms, restructuring has always been easier, but it has even improved further in the Crisis, e.g. in Spain (even allowing some new fresh money to have some priority over existing senior debt or giving second opportunities to entrepreneurs with too much debt). A right balance between too much debt overhang and zombie lending to inefficient firms and banks has, of course, to be struck.

- The only aspect that has not been touched at all is a framework for insolvency for countries, and this is urgently needed.

Similarly as for households, enterprises and banks, restructuring of sovereign debt requires an adequate framework, especially in a currency union.

The repeated adjustment in Greece's debt burden after 2010 and 2012 has increased uncertainty, especially given the ad-hoc nature of these adjustments. The lack of such framework and the attitude 'we do not do sovereign insolvency in Europe' in 2009/10 has delayed the urgently needed adjustment of the Greek debt burden. Even the 'private sector involvement', i.e. bail-in of private debtholders in 2012 proved to be insufficient. In the US, public default occurs and 'life continues', as it happened with Detroit, Orange County, and very recently with the problems in Puerto Rico.

Given that there is not going to be a fiscal union in the Eurozone soon, financial integration is one way of obtaining higher risk sharing within the Eurozone. Financial integration has been mainly through debt, and debt (as we have explained) which cannot be easily restructured. Thus:

- More debt restructuring in general and favouring more equity-based type of finan-

cial instruments (over debt) would allow for substantial higher risk sharing within the Eurozone, thus limiting partially the problems associated with a lack of fiscal union within a monetary union.

Rescue – do it once and right or lose traction/momentum

On the rescue programmes for very weak countries, substantial reductions in public debt should have been traded with true structural reforms that improve GDP and the competitive environment of the local economy. Greece could have done many, as the above example of the independent statistical institution shows us, or as Papaiannou et al. (2015) explain carefully, and not the mistakes on contractive fiscal policy given the strong fiscal multiplier in crisis times.

- It is important that such structural reforms are 'owned' by the local government, the political class, and the population of a country.

Greece has clearly shown that if this is not the case, it won't work. We predict that doubling down, as currently being done by going step by step (as Ms. Merkel likes to do without looking ahead) has in great part brought us into this bad situation and will not solve the problem.

Compromises have saved the day and lost the year! To quote just one example, the Greek liquidity support of 2010 and debt restructuring 2012, partly motivated by the desire to protect banks in Germany and France, where a large share of private debt was swapped for public debt, has resulted in a rise in political tensions between Greece and its creditors over the past years. It has ultimately resulted in a rise of nationalism and populism across the Eurozone, both in periphery countries (most notably Greece), but also in the creditor countries, such as Finland and Germany.

The human factor counts

The human factor counts; trust is crucial. Trading a reduction of debt for future deep structural reforms, including institutional framework, requires trust, and trust has been lost on both sides. If one cannot trust that the Greeks have a properly functioning statistics office, can outsiders trust them on deep structural reforms over time after an initial large debt reduction?

Economists often like to view policymakers as rational players, deciding purely on the basis of numbers and arguments. The experience with Yanis Varoufakis, Greek finance minister for the first half of 2015, has shown that this is not necessarily the case. Tensions were rising very openly in the Eurozone. The very different style of the new Greek finance minister might very well have contributed to the agreement in early July between Greece and its creditors, even though numbers and arguments had not really changed. Of course, even after the Greek referendum, the other countries have to sell the third Greek bailout to the local voters, and these voters also need to trust that their governments look after their interests. One missing solution that is not on the table is substantial debt relief as substantial reforms are taken over time, which may be incentive-compatible for both sides.

A central bank is a political player – no matter what the Treaty tells you

The ECB has been crucial in the Crisis. Draghi's statement to do 'whatever it takes' (and the related OMT) was crucial in calming markets during the Eurozone public debt crisis of summer 2012 and avoiding self-fulfilling runs. In this context, the Eurozone also provided public liquidity to banks when European cross-border interbank markets failed.

- A central bank can never be a purely technical institution – politics is always involved (unlike what some German economists and politicians like to think).

The role of the ECB in the recent stand-off between Greece and its creditors, most prominently the other 18 Eurozone countries, has clearly shown that. Beyond being a creditor to the Greek government – a rather unfortunate role – at which point does the ECB decide as the lender of last resort to not extend liquidity support to Greek banks further or even withdraw it? Given multiple equilibria, and the associated large economic and political costs, if the (ex-post) wrong decision is taken, this is clearly not a purely technical decision.

More generally, most economists agree by now that financial stability should also be a concern of the ECB, in addition to price stability. While the inflation target paradigm of the pre-2008 period was based on a clear separation between (micro-prudential) financial stability and monetary stability, the Crisis has taught us that such a separation is not feasible.

Central banks' primary objective in history has been financial stability, while price stability is a more recent focus. Most times, both objectives reinforce each other, but not always. Moreover, with free capital mobility and without a full banking union (including deposit insurance), once citizens think that their country could potentially leave the Eurozone, it is optimal – and hence self-fulfilling – to run on the banks, thereby completely destabilising a bank-dominated economy.

Importantly, however, the ECB's role is not substitutive of the periphery economies reforming their economies, notably Greece but also the others, and the creditor countries allowing some sovereign debt restructuring and more expansive fiscal policies.

Concluding remarks

The Eurozone is not doomed; it just needs better economic and financial policies. The experience with the mistakes in crisis resolution over the past five years can serve as critical input into the necessary institutional reform in the Eurozone.

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Maastricht flaws and remedies

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The problems in the Eurozone are not a side effect of the Global Crisis but rather date back to the Maastricht treaty. This chapter argues that, although the architecture of the Eurozone has been largely reshuffled, the end point has probably not been reached yet. First, it is necessary to make debt restructuring possible within the Eurozone. In particular, the risk loop between sovereigns and banks needs to be stopped through more diversified balance sheets. Second, there is a need for more shared sovereignty, not only for debtor countries, but also for creditors.

The crisis in the Eurozone since 2010 is not a mere side effect of the 2008 Global Crisis. It results from a flawed construction that dates back to the Maastricht treaty. It took some time for unprepared Europeans to understand that, to a large extent, the crisis was endogenous to the monetary union. The single currency was not itself the cause of the crisis. What was at stake was the fact that governments had not fully understood the regime change. Quite the contrary, they had enjoyed the comfort provided by the single currency, without keeping an eye on balance of payment and price developments. Five years after the beginning of the Greek crisis, the architecture of the Eurozone has been reshuffled, with more surveillance and coordination, and institutions to address bank and sovereign crises. Still, the end point has probably not been reached yet.

Maastricht wisdom

The architecture of the European monetary union was initially based on three simple ideas.

- Most macroeconomic shocks would be symmetric and could be smoothed by the single monetary policy.

Residual asymmetric shocks would be tackled by national fiscal policies. Once national budget would have reached a level 'close to balance', there would be ample room for macroeconomic stabilisation trough national budgets.

The simple rule of thumb at that time was that a 1% fall in GDP would deteriorate the fiscal balance by around 0.5% of GDP through automatic stabilisers (Buti and Sapir 1998). Starting from fiscal balance, a government could then face a 6% fall in GDP without coming up against the 3% deficit limit. Automatic stabilisers would thus be fully able to play their stabilising role. With a more realistic 1% fall in GDP, the government could easily go beyond automatic stabilisers and perform discretionary fiscal expansion.

- It was also thought that financial integration would contribute to macroeconomic convergence and stabilisation.

First, the single currency would ease capital flows from north to south, fostering productivity catch up in the south. Second, in case of a negative shock in one EZ member, foreign capital could make up for lacking domestic credit, while portfolio diversification would contribute to sustain national income, in line with the risk-sharing literature pioneered by Asdrubali et al. (1996).

- Fiscal profligacy was correctly viewed as a risk to the stability of the union (Eichengreen and Wyplosz 1996), but there was confidence that the Stability and Growth Pact (SGP) would ensure that each member state keeps its house in order.

Furthermore, it was thought that the impossibility to devalue national currencies would act as a disciplinary device on national wage and price-setting mechanisms.

As for the risks originating in the banking sector, they were largely neglected.

Maastricht flaws

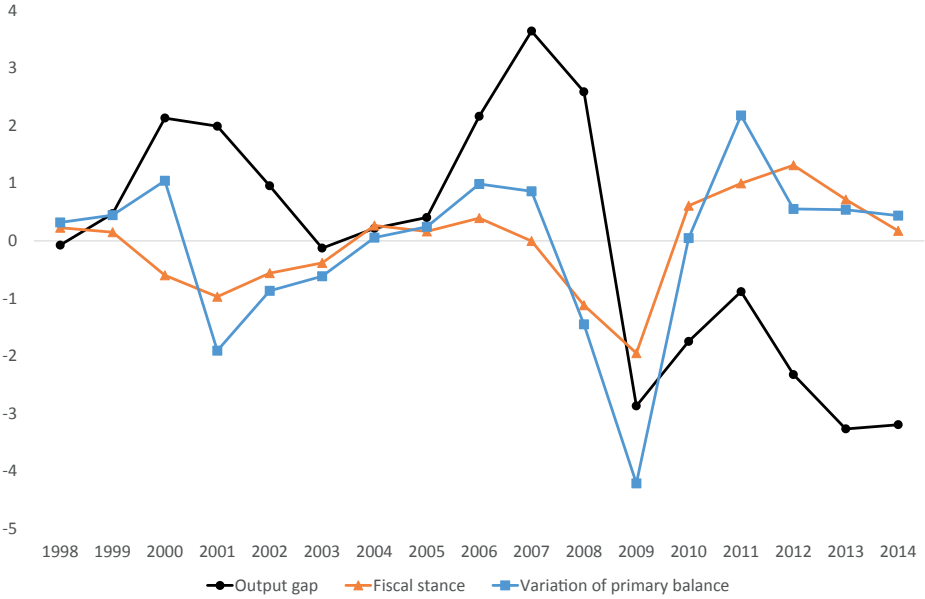
The crisis has profoundly questioned these three pillars of the Maastricht wisdom.

- During the crisis, monetary policy soon reached the zero lower bound.

Although the ECB tried hard to circumvent this constraint through various non-conventional measures, it appeared quite clear in 2012 and 2013 that the policy mix of the Eurozone was not expansionary enough. National governments as a whole were tightening fiscal policy in a period when the output gap was widening again (Figure 1).

At the national level, many member states were constrained to perform pro-cyclical policies, either because they were under an adjustment programme, or because they were under the corrective arm of the Stability Pact. This was not compensated by fiscal expansion elsewhere. For instance, Germany increased its underlying primary surplus by 0.7% of potential output from 2011 to 2012.

Figure 1. Aggregate fiscal policy in the Eurozone, 1998-2014 (% of GDP or potential GDP*)



Source: Author, based on OECD Economic Outlook 97;* Output gap in% of potential GDP. Variation of primary balance in% of GDP; Fiscal stance: variation of underlying primary balance in% of potential GDP; a positive number points to fiscal tightening.

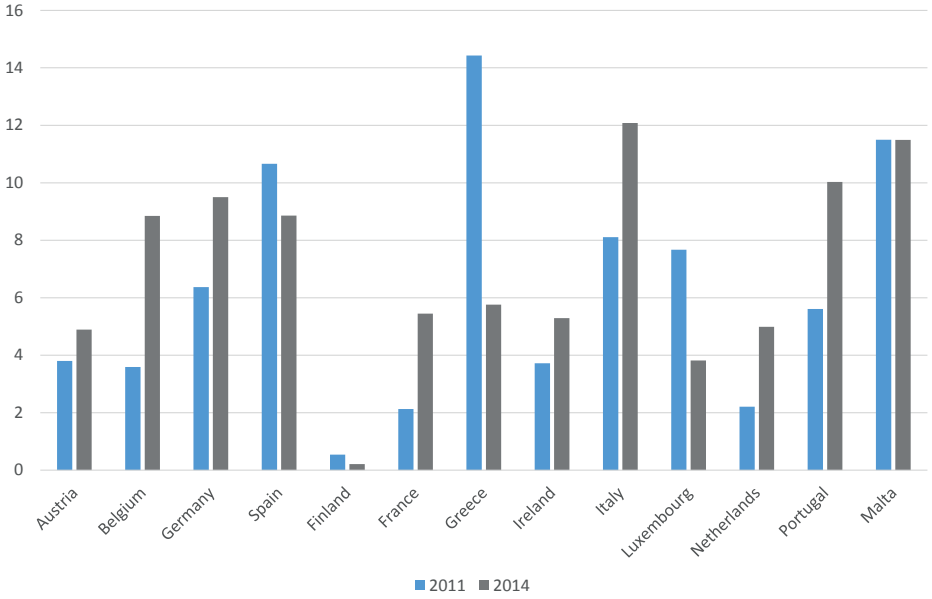
- The idea that financial integration would contribute to both convergence and macroeconomic stability proved rather naïve.

First, capital flows tended to feed non-tradable sectors in the periphery of the Eurozone (Giavazzi and Spaventa 2010). In receiving countries, the increase in liabilities was not sustainable since it did not correspond to the building up of export capacities. Worse, if contributed to house price bubbles that would inevitably burst at some point.

Second, financial integration did not play as a smoothing device when the crisis hit. Quite the opposite, crisis countries suffered sudden stops (Merler and Pisani-Ferry 2012). Third, financial integration did not prevent the bank and sovereign risks to feed each other at the national level due to the over-representation of national sovereign bonds in some bank balance sheets coupled with the 'too big to fail problem', i.e. the

perceived obligation for national governments to bail out the banks in case of bank insolvency (Figure 2).

Figure 2. Holdings of national sovereign bonds by Monetary Financial Institutions as a proportion of total assets (percentage values)

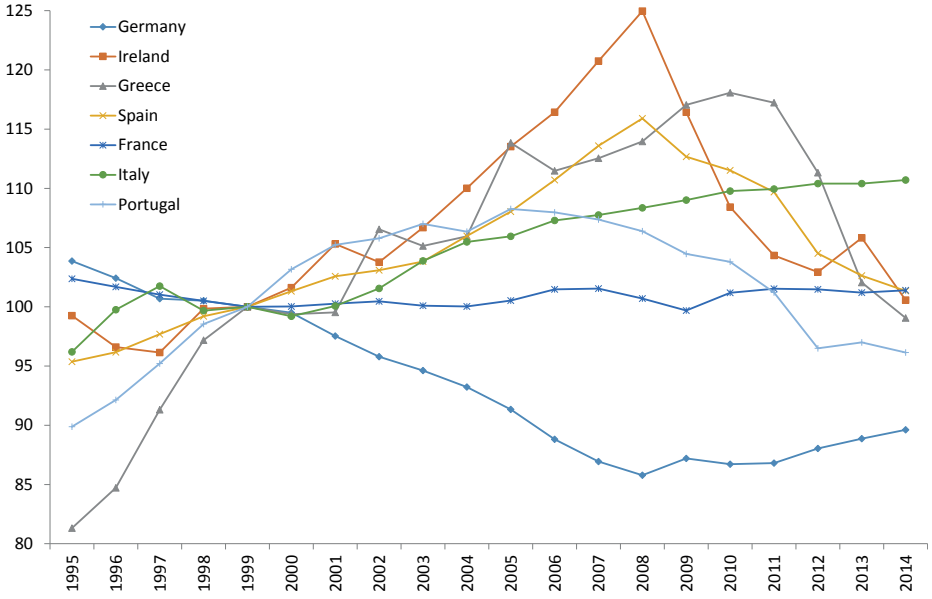


Source: ESRB (2015).

- Finally, the Stability Pact proved a poor instrument to prevent fiscal profligacy in Greece, and it proved irrelevant to prevent sovereign debt crises in other peripheral countries.

It should be remembered that Irish sovereign debt stood at just 25% of GDP before the crisis. As for the disciplinary effect of the single currency on wage and price setting at national level, it failed to prevent large divergences across the Eurozone (Figure 3).

Figure 3. Nominal unit labour costs as percent of Eurozone 18 (100 in 1999)



Source: Ameco.

Remedies

In the wake of the crisis, EZ members worked hard to address the three flaws mentioned above.

- The ECB was creative enough to engineer different forms of non-conventional policies, including quantitative easing which, without a liquid pool of federal bonds, was not as straightforward as it was for other central banks in the world.

Meanwhile, the creation of the European Stability Mechanism (ESM) aimed at allowing crisis countries to accede to foreign financing under severe conditionality, while the ECB's Outright Monetary Transactions (OMTs) where aiming at eliminating self-fulfilling expectations of euro exit through keeping sovereign spreads at reasonable levels.

- Recognising the failure of financial integration to foster convergence and resilience

over the first decade of the single currency, European leaders added a 'banking union' to the monetary union.

Banking union includes: a transfer of bank supervision to the federal level; a single bank resolution procedure with bail-in rules; and a system of macro-prudential policies. A deposit re-insurance scheme is supposed to be added in order to raise the resilience of the banking sector in case of a confidence crisis (Juncker et al. 2015). Leaders also launched a far-reaching project of 'capital market union' to foster more diversification of investment finance (see Véron 2014).

- Fiscal and macroeconomic surveillance were strengthened through the 'six pack', 'two pack', and 'fiscal compact'.

In particular, the Macroeconomic Imbalance Procedure (MIP) aims at preventing macroeconomic imbalances emerging in non-fiscal areas such as private leverage or unit labour costs, and the 'European semester' is designed to allow for a macroeconomic coordination across members prior to national decision making. These different elements, however, ended-up in a complicated, bureaucratic process rather than a fully-fledged coordination of macroeconomic policies (Bénassy-Quéré and Ragot 2015).

More importantly, the Eurozone tended increasingly to function as a 'gold exchange system' – like the 1970s Bretton Woods system – where the burden of the adjustment falls on deficit countries, introducing a deflationary bias (Keynes 1942). There are three reasons for the deflationary bias in the Eurozone. The first one is universal. There are limits to borrowing, but no limit to lending, hence only borrowing countries need to adjust at some point while creditors can continue to lend to other countries. The second reason is the asymmetry of the Stability Growth Pact, which caps the fiscal deficit but not the surplus, and imposes minimum speeds of adjustment but no maximum speed. The third reason is the difficulty in coordinating non-fiscal policies. For instance, governments can easily argue that unit labour costs are beyond their reach, or that they never agreed to transfer any sovereignty concerning the minimum wage or collective bargaining procedures.

Still under construction

The major area where no bold decision was taken so far is the 'fiscal union' area. In 2011, the German Council of Economic Experts proposed to create a 'redemption fund' where sovereign debts above the 60% of GDP threshold would be pooled, with earmarked national taxes to progressively eliminate these debts. Several variants of Eurobond schemes were subsequently floated but the idea of debt mutualisation was difficult to defend given the evaporation of mutual trust.

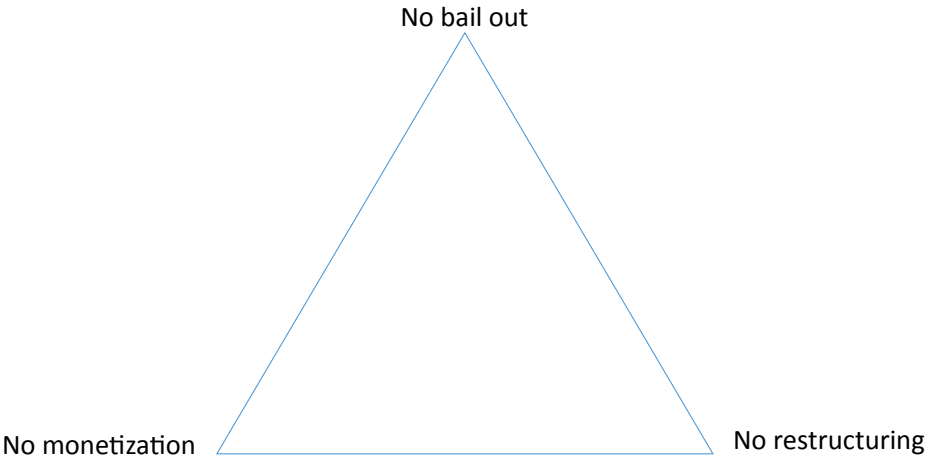
In 2012, the Report of the four presidents (Van Rompuy et al. 2012) proposed to introduce a 'fiscal capacity' at the level of the Eurozone, but no substantial debate took place at political level. In 2015, the Report of the five presidents (Juncker et al. 2015) followed up with the idea of a budget aimed at macroeconomic stabilisation. There are numerous ways to conceive such budget, based on quasi-automatic rules or discretion, aimed at stabilising idiosyncratic or symmetric shocks, targeting all shocks or only large shocks, etc. In a sense, the ESM is already a form of Eurozone budget aimed at refinancing individual Member states in the event of a liquidity crisis. However, the scope for the ESM is limited by the no-bail-out provision of the treaty.

Trilemma of EZ crisis management

This brings us to a major contradiction that still needs to be worked out by the Europeans.

- Since the treaty excludes both debt monetisation and a bail out of member states, the reluctance of the Europeans to proceed to debt restructuring leads to one of these 'impossible trinities' that are widespread in the economic literature (Figure 4).

Figure 4. The internal contradiction of crisis management in the Eurozone



Source: Author's elaboration.

The way the Europeans have worked out of these constraints so far has been to provide official assistance (liquidity support) in exchange for strict fiscal adjustment programmes (to ensure solvency without debt restructuring). But these programmes have raised the question of the very nature of the Eurozone – a monetary union without political union. Indeed, national adjustment programmes, monitored by the 'troika' and subsequently by the 'institutions' can be viewed as a form of 'federalism by exception' (Trichet 2012), albeit with limited accountability (European parliament 2014).

This fundamental problem culminated with the 13 July 2015 agreement concerning Greece. This appeared as a 'diktat' from creditor countries (especially Germany), with deep intrusion in Greek national affairs. A few weeks before, the people in creditor countries were asking themselves why only the Greeks were offered (through a referendum) the opportunity to express their opinion on a systemic, Eurozone question.

In fact, there are two ways to introduce more democratic accountability in crisis management:

- The first one is shared sovereignty; allow for intrusion in national affairs, but in a more democratic way.

In the Greek case, this would have meant allowing a Eurozone committee of the European parliament to vote on the adjustment programme imposed in exchange for further financial assistance. This would involve the EMS becoming a European institution (whereas it was created through a separate treaty, as an inter-governmental body).

- The second path is to allow for sovereign default, which would force both debtors and creditors to face up to their own responsibilities.

The problem is whether such default is possible within the Eurozone, when banks are loaded with national sovereign bonds. The risk is that a sovereign default could trigger bank insolvency. The latter would then trigger a liquidity crisis since insolvent banks cannot get refinancing within the lender-of-last-resort procedures. To avoid a collapse of the national economy, there would be no other way than to re-introduce a national currency to refinance the banks.

In order to make default possible within the Eurozone (hence, to make the no-bail out clause credible), it would first be necessary to diversify the asset side of bank balance sheets. There are basically three ways to do it: Through sovereign risk weighting; through large exposure limits; or through a substitution of federal for national sovereign bonds. One of these three options still needs to be decided.

It will probably be necessary to combine shared sovereignty with the possibility of a national government to default. The reason is that none of these two extreme solutions is fully reliable, and because financial integration in the Eurozone translates into large spillovers when a sovereign default is at stake.

One possibility to combine the two has been proposed by Corsetti et al. (2015). Above a certain threshold of debt, a government would get access to ESM financings provided existing debts are restructured on top of the introduction of an adjustment programme.

Conclusion: What's next?

Looking back to initial Maastricht thinking, it is impressive how things have changed over a rather limited period of time. Still, the new instruments introduced have raised the issue of national sovereignty within a monetary union. To what extent can a national government follow the preferences of its own people as expressed by democratic vote?

For sure, national sovereignty of debtor countries is always constrained when creditors are no longer willing to roll over their debts, and this rule applies in a monetary union. However, monetary union does reduce the scope for debt restructuring to the extent that it raises the issue of euro membership.

Given the burden of legacy debts, it is necessary to make debt restructuring (with possible haircuts) possible within the Eurozone. In particular, the risk loop between sovereigns and banks needs to be stopped through more diversified balance sheets. Failing to do so will keep the Eurozone vulnerable to any large event that could affect a member state.

Sustainable euro membership, however, also requires more shared sovereignty, not only for debtor countries, but also for creditors. Surplus countries, especially Germany, should recognise the need to reduce the gap between aggregate supply and demand, and to contribute to price re-convergence within the Eurozone. Should a 'Minister of Finance' of the Eurozone be introduced, he or she would be in charge of ensuring a symmetric convergence within the Eurozone and to coordinate a common response to symmetric shocks; not just to check that member states comply with fiscal rules.

The second issue that needs to be addressed is the question of a common budget for the Eurozone. At a minimum, the Eurozone needs a fiscal backstop for its banking union. But a common budget could also provide support to labour mobility or unemployment re-insurance when a country is hit by a very large shock. At the aggregate level, a common budget could also supplement the single monetary policy when the Eurozone is hit by a severe shock

Unlike the EU budget, a Eurozone budget aiming at macroeconomic stabilisation would need to allow for surpluses and deficits, depending on the Eurozone business cycle. This would involve a capacity to borrow on bond markets, and to repay based on a common tax. These evolutions would require a Eurozone parliament to vote the budget (and the tax), and Minister of Finance to execute.

These are far-reaching changes that would require a new treaty. It could appear a remote perspective. However, the difficulty in tackling the Greek crisis reminds us of the need to improve the institutional setting of the Eurozone – even without the perspective of a fully fledged budget. The risk today is less that of debt unsustainability than that of political unsustainability.

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Roots of the Eurozone crisis: Incomplete development and imperfect credibility of institutions[1]

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At the birth of the euro, the fiscal, financial, and monetary institutions of the monetary union were not sufficiently developed. This chapter describes these inefficiencies and the role they played in the Eurozone crisis. Instability in the Eurozone grew out of a disruptive deadlock between national governments forced to address and correct fundamental weaknesses in their national economies on their own, and the EZ-level policymaking. The future of the Eurozone therefore rests on developing an institutional framework that can credibly deliver stability at the EZ level.

Institutional deficiencies at the launch of the euro

At the birth of the euro, it was well understood that the fiscal, financial, and monetary institutions required for a sustainable currency union in Europe were not sufficiently developed. Actually, the euro was launched with a dangerously void institutional core:

1 I thank Riccardo Trezzi for comments, and especially for suggesting the graphs in Figure 1, and Anil Ari and Samuel Mann for excellent research assistance and comments. The text draws on my work as Duisenberg Fellow at the Netherlands Institute for Advanced Study in the Humanities and Social Sciences in Wassenaar in 2012. I greatly benefitted from comments by researchers at the Bank of Italy, who hosted me while writing this chapter.

- The regulation, supervision, and resolution of financial intermediaries were extremely fragmented along national lines, with no common pool of resources to address crises.
- The no-bail out clause was stated formally, without defining any of the institutions responsible for regulating cross-border fiscal insurance, ring fencing, and backstop, that would make the option of restructuring debt politically appealing at national and systemic level. The rule was not remotely credible.
- Without any common policy framework to manage national fiscal policy, nothing ensured the appropriate cyclical stance at Eurozone level.

Most importantly, there was no clear vision on which minimum standards of political and institutional cohesion among independent states would be required for the viability of the project.

Nonetheless, the consensus view was that the member states of the union would be able to reach agreement and cooperate on how to create the common currency institutions over time.

The history of European monetary institutions pre-dating the euro was brought to bear on the idea that institutional developments were bound to occur, most likely under the pressure of disruptive shocks and crises – a view typically attributed to Jean Monnet. Although negative shocks naturally create faulty lines and policy conflicts among policymakers, it was widely expected that, eventually, the forces in favour of integration and cooperation would prevail. The historical importance of tying together Europe would have provided sufficient motivation to overcome obstacles, smooth differences over policy, and elicit solidarity.

Perhaps it was just bad luck that exposed the danger and limits of relying on Monnet's optimistic view. Nobody expected a crisis of the magnitude and scale of the Great Recession to occur, at least not so soon. But when the crisis struck, the reality was

exposed. The monetary union was incomplete, hence vastly unprepared, with dreadful implications.

The outcome turned Monnet's logic on its head. The process of building institutions and rules essential for a well-functioning currency union proved to be destabilising. A consensus on how to prevent and/or deal with macroeconomic and financial crises in the future had to be achieved together with an agreement on immediate emergency measures dealing with current shocks. As remarked by Marco Buti, building institutions after a shock means that their design will naturally create winners and losers ex post. Countries' judgement and voting will be strongly influenced by immediate considerations, rather than by a fair assessment of the long-run consistency of the design. Unavoidable conflicts among national policymakers translated into uncertainty and delays in implementing desirable policy initiatives – especially apparent in comparison to the timely policy response to the crisis in the US.

It is well understood that a lack of policy credibility can expose an economy to a disruptive belief-driven crisis on the debt market. With the crisis, the problem of credibility in the EZ became, so to speak, squared. It had both a domestic and a systemic dimension. In particular, the deep policy conflict on adjustment has systematically undermined the success of EZ interventions, and itself became a source of destabilising shocks.

- Instability grew out of a disruptive deadlock between national governments forced to address and correct fundamental weaknesses in their national economies on their own, and the EZ-level policymaking, which could have created the conditions for successful implementation of national policies, but did too little too late (at best).

A comparison with the previous systemic crises hitting the institutions of European monetary cooperation provides insight on the problem.

- During the 1992-93 crisis of the Exchange Rate Mechanism of the European Monetary System, countries had more instruments to absorb shocks and the crisis was relatively milder.

Exchange rate adjustment and moderate inflation at the national level arguably fostered and sped up the correction of domestic imbalances. Yet, they also created trade-offs.

- Also in the 1990s many countries had to pursue strongly recessionary policies to anchor inflation expectations and fence off speculative attacks on their currency; in those years, like today, domestic efforts alone could not and did not put an end to financial and currency turmoil in Europe.
- Financial and macroeconomic stability was restored only after the Madrid summit in 1995, when, in part in recognition of the adjustment efforts at domestic level, European policymakers could rebuild political cohesion on the euro project.

In the current crisis, EZ member countries are precluded from relying on exchange rate adjustment and moderate inflation to speed up adjustment to shocks and imbalances. If anything, many countries do face adverse trade-offs (e.g. policies targeted to reduce wages and prices help competitiveness but raise the burden of debt in real terms) which slow down the process. Here is the problem.

- While increasing the social value of coordinated adjustment at union-level, slow domestic adjustment exacerbates the policy conflict and mistrust among national policymakers, undermining cohesion and cooperation.

The future of the Eurozone rests on breaking this deadlock, by developing an institutional framework that can credibly deliver stability at the EZ level.

Significant progress has already been made in regards to the banking union and a framework for containing and addressing sovereign crises. Yet, it is difficult to see the exact shape that the institutional architecture of the EZ will eventually take.

In what follows, I develop the argument exposed above by briefly discussing a key phase of the crisis specific to the EZ. Given the space limitations, I will be selective in themes and omit some topics, like banking crises, which would require specific analysis. By no means is this omission meant to rule out their specific role in the crisis.

The policy conflict on adjustment let the 'risk premia genie' out of the bottle

The Eurozone did not fare badly in the first years of the Global Crisis. At a global level, the Great Recession starting in 2007-08 exposed the fragility of financial intermediaries and worsened the fiscal outlook of advanced countries. Participating in the European monetary union appeared to shelter countries from the early difficulties experienced by countries with a large financial sector relative to their tax base, such as the UK and Switzerland.

A striking reversal of fortune occurred in 2010. The ex-ante risky countries outside the EZ progressively managed to convince markets that they could weather the storm. They successfully put 'the risk premia genie' back in the bottle. Conversely, in the EZ, fault lines between EZ members with low and high debt (not necessarily higher than the 'safe countries' outside the EZ), translated into an open policy conflict on adjustment, which ultimately fed doubts about the stability of the Eurozone. With a vengeance, 'the risk premia genie' came out of the bottle, and EZ policymakers are still struggling to rein it in.

- While different countries had different fundamental weaknesses, what ultimately became everybody's main focus was the level of their debt.

In some cases, like Italy, the problem was the size of the outstanding public debt, resulting from many years of slow growth and loss of competitiveness.[2]

In other countries, like Spain and Ireland, abundant capital inflows had fed a housing boom and price inflation, associated with excessive credit expansion and, in the case of Spain, external imbalance. The problem was the size of prospective contingent liabilities from banks' losses, which translated into large prospective debt and deficit for the public sector.

2 In Italy, past reforms of the social security system and a relatively low exposure of the banking system to dubious international assets reduced the size of contingent public liabilities.

In Greece, there was both a flow and a stock problem, with the emergence of a (long hidden) budget imbalance.

In all these cases the stock of (current and/or prospective/contingent) public liabilities was seen as too high relative to their capacity of fiscal and economic adjustment. Now, a country can address its debt problem in three ways: Grow out of it; increase its surpluses, which is likely to entail economic and budget reforms to address the problem at its source; or restructure its stock of liabilities.[3] With the growth option out of the picture (based on a fair assessment of the room for sustained economic expansions among industrial countries), the policy debate turned onto budget correction and debt restructuring.

Experience shows that in both the budget correction and debt restructuring cases, there are critical conditions for their successful implementation. These include

- Some form of backstop to government and/or private debt, required to reduce the vulnerability of a country to belief-driven speculative attacks (see Corsetti and Dedola 2012). Eventually, the ECB was in a position to design the Outright Monetary Transactions (OMT) programme. But it took time, and in the meantime countries suffered unnecessary harm.
- An institutional framework setting clear and effective rules for managing solvency crises, of banks as well as of sovereigns, to reduce costs and risks of contagion effects.

In the absence of any credible institutional framework setting up rules and facilities to provide a backstop, to share losses and to enforce conditionality, European policymakers became deeply divided over policy strategies and the distribution of their costs, embracing opportunistic principles.

3 The list does not include runaway inflation, as this would be better described as a manifestation of the high debt problem, rather than a solution to the problem.

Due to this conflict, trust among policymakers quickly evaporated. Crisis countries were forced into austerity measures with counterproductive short-run effects and very little impact on risk premia, whose movements remained strongly correlated across borders. Countries that managed to emerge in a relatively stronger position had no intention to pursue expansionary policies and grant assistance to others, based on two arguments. First, they wanted to avoid any dilution of fiscal and macroeconomic discipline, as a strategy to prevent markets from charging their country a risk premium. Second, they shared the belief that help and liquidity assistance to crisis countries would relax incentives to reform and embrace serious fiscal and macroeconomic correction.

The cost of the EZ crisis

The crisis of the Eurozone manifested itself in full force in 2011 when interest differentials between the crisis countries and Germany widened and became highly volatile. After the ECB announcement of the OMT programme, these differentials narrowed drastically. Although the market turmoil did not subside, the OMT represented a turning point in economic conditions.

Figure 1 shows the development of GDP in Germany, France, Spain, Italy and the UK between the first quarter of 2008 (=100) and the first quarter of 2015.

- While contracting more, Italian GDP follows a very similar pattern to the GDP of France and the UK until the first half of 2011, as if the three were moved by a common factor.
- After that date, when the sovereign debt crisis blows out in full force in the EZ, the UK and France kept improving; the Italian GD, instead, abruptly fell to about 9 percentage points below the level at the beginning of 2008, where it stabilised in 2013.

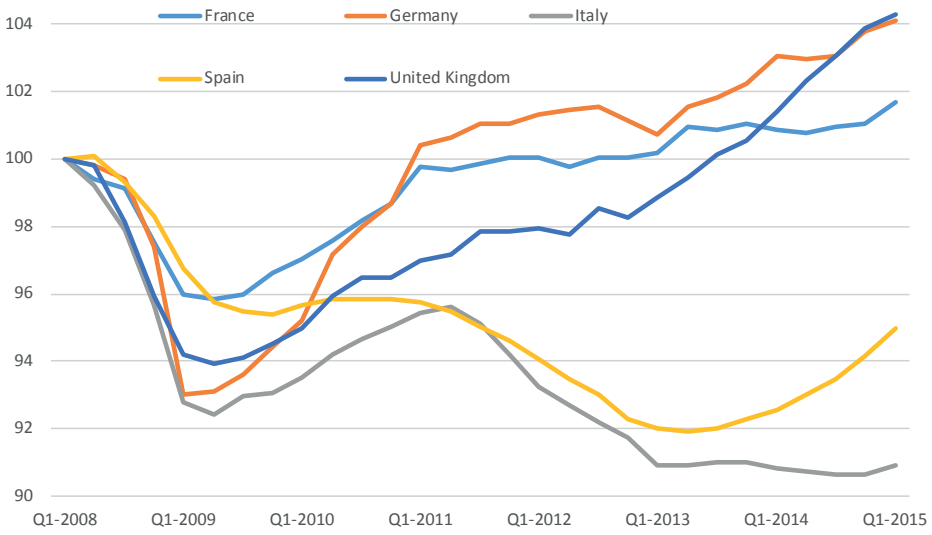
At the time of writing, the difference between the Italian and the UK GDP is as high as 12 percentage points. A similar story applies to Spain and other countries. Different from Italy, 2013 marked the beginning of a timid recovery in Spain.

To be clear: there is no doubt that weak Italian and Spanish fundamentals have played a key role in the above development, and one cannot expect risk premia on bonds by independent states to be equalised by magic when joining a monetary union However, it is hard to maintain that the premia in financial markets after 2010 were mainly driven by fundamental factors. Similar to the literature casting doubts on the stability of fixed exchange rates, seminal work in the literature on financial and debt crises have long made it clear that, with imperfect policy credibility, the market equilibrium is not necessarily unique (see Calvo 1988, recently revisited by Corsetti and Dedola 2012, and Cole and Kehoe 2000, among others; CEPR researchers have been key contributors in the field).[4]

The indeterminacy problems that come with multiple equilibria are exacerbated when policy rates are close to the zero lower bound and thus unresponsive to negative shocks (Mertens and Ravn 2010, Corsetti et al. 2013).

4 As shown by Calvo (1988) and Cole and Kehoe (2000) for the case of a country operating on its own, what enables financial markets to launch successful speculative attacks on sovereign debt based on expectations of fiscal fragilities is the absence of a credible policy and a budget regime to anchor expectations. It is exactly because policy credibility is imperfect that, in equilibrium, expectations of a crisis unrelated to fundamentals are bound to be validated ex post by actual budget and macroeconomic developments. A similar argument is put forward by Obstfeld (1995) for currency crisis.

Figure 1. Real GDP for selected countries (Q1 2008 = 100).



Source: OECD

The diabolic loop

The financial turmoil ignited as self-fulfilling prophecies had profound effects on economic behaviour and the state of the economy. Early on, CEPR researchers had warned about the *diabolic loop* set in motion by a sovereign risk premia crisis. Losses on banks' holdings of sovereign debt transmit to the real economy via a credit crunch, which in turn feeds back onto lower taxes and thus higher public deficits, raising sovereign risk even further (see Brunnermeier et al. 2011; for an analysis of financial fragility see Ari 2015).

Even more, sovereign risk can be expected to affect corporates' risk more generally than just through the banks' balance-sheet channel. Conservative estimates suggest that an increase in 100 basis points in the risk premia on sovereign debt implies an increase in financing costs for firms of about 40 to 50 basis points (see, e.g., Acharya et al. 2015, Bahaj 2013, Hajres 2011, Neri and Ropele 2013, Zoli 2013).

Sovereign risk raises borrowing costs not only for small firms, which most likely rely on local banks, but also for large (multinational) corporates, which despite having their headquarters in a crisis country, have access to international financial intermediaries and markets. In joint work with Kuester, Meier and Mueller I suggest that this feedback effect from sovereign risk to private borrowing costs creates a *sovereign risk channel* of transmission (see Corsetti et al. 2013a,b).

The main features of a macro model of the sovereign risk channel are quite realistic and consistent with the evidence from the Eurozone and elsewhere. Markets charge higher risk premia to countries with a higher (current and future path of) public debt. Private firms' borrowing costs rise by some fraction of the increase in risk premia.

The loop is a powerful source of instability. Consider the possibility that market participants become arbitrarily pessimistic regarding a country's growth. For a given monetary policy and a given exchange rate, markets forecast a fall in economic activity and a deterioration of public finances consistent with their arbitrary expectations. To the extent that this deterioration translates into anticipations of higher prospective deficits and debt, risk premia on government debt then peak already in the short run, driving up (through the sovereign risk channel) private borrowing costs.[5] As a result, economic activity falls on impact, so validating the initial expectations.

Countries with high debt, like Italy, are obviously particularly vulnerable to a belief-driven downturn and sovereign risk crises of this kind. It is worth stressing that what matters for this channel to operate is the prospective (not current) debt level, thus including contingent and future liabilities.

5 The channel would not be consequential if monetary policy offset a rise in risk premia with interest rate cuts, consistent with the monetary prescription by Curdia and Woodford. In the presence of constraints on monetary policy (say, policy rates are at the zero lower bound), Corsetti et al. (2013a) also assesses the scope for imperfectly credible fiscal authorities to lean against speculative behaviour, by engineering pro-cyclical budget cuts; only under very strict conditions, can this reaction sever the link between expectations of a downturn and anticipations of higher deficits. In general, pro-cyclical cuts are not an effective strategy.

Rebuilding trust and cohesion

After 2010, financial instability grew steadily in the Eurozone in large part reflecting insufficient development of EZ institutions and cooperative policies able to shield the member countries from self-fulfilling crises and bring the system to correct the 'imbalances' at the root of the instability. The two goals are strictly interrelated.

A widespread view created a political hurdle. This is the view that shielding a country from speculation would water down the incentive to implement reforms and correct imbalances.

An important point from the literature on the international lender of last resort was (and still is) apparently lost in translation.[6] The incentive effects of bailouts and transfers implied by an "insurance" scheme are quite different from the incentive effects of a pure backstop.

In an insurance scheme, ex-post bailout/transfers have strictly positive probability.

- Transfers and subsidies reduce the incentive to undertake costly policy actions, by making future economic outcomes less dependent on current policy.

A pure backstop strategy does not require a transfer of resources with positive probability. It works via a credible commitment to carry out interventions *off-equilibrium*, i.e., in response to belief-driven speculative attacks that, if the strategy is successful, never occur.

While the short-run costs of national reforms, in political and economic terms, are immediately felt, the expected benefits from them may be at stake if belief-driven speculative attacks can at any point in time worsen the country's macroeconomic and financial outlook. Under these circumstances, a backstop to government debt that

6 See Chari and Kehoe (1998), Fisher (1999), Morris and Shin (2005), Corsetti et al. (2006), among many others

shields a country from arbitrary and disruptive speculative behaviour, improves the expected benefits from reforms relative to their costs.

- By ruling out the possibility of a crisis and downturn driven by arbitrary expectations, a backstop strengthens the incentives for governments to undertake costly corrections of its fundamental imbalances (see Corsetti and Dedola 2011 for a formal analysis).

This is not to deny the risk of moral hazard from the practical implementation of a backstop strategy. Fundamental and belief-driven crises are difficult to tell apart. Moreover, the objective function of the incumbent government may have partisan or private objectives, which bias its willingness to take the 'right' action. But exactly for these considerations, in practice, backstop strategies can work well provided that EZ institutions are developed enough to enforce some reasonable form of conditionality and sufficiently strict rules about what qualifies a country for support. In many respects, the ECB's OMT programme has been designed to address exactly these prerequisites.

Despite the success of the OMT in 2012, a credible stand by the ECB on sovereign debt is just one piece in the complex institutional puzzle still to be completed. Institutional and policy uncertainty about banking union, fiscal rules, debt crisis management, and the general prospect for consolidation of the Eurozone remain high, and the policy conflict still quite strong.

Unfortunately, while other areas in the world with a higher debt level – at the outburst of the crisis or even now – seem to have returned to a path of growth and recovery, letting the risk-premia genie out of the bottle appears to have created a difficult inheritance for European citizens. Debt and debt overhang can be expected to condition policymaking for years to come, to a much larger extent than in other areas, substantially complicating the design of efficient stabilisation and reforms.

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Design failures of the Eurozone

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Economists were early critics of the design of the Eurozone, though many of their warnings went unheeded. This column discusses some fundamental design flaws, and how they have contributed to recent crises. National booms and busts lead to large external imbalances, and without individual lenders of last resort – national central banks – these cycles lead some members to experience liquidity crises that degenerated into solvency crises. One credible solution to these design failures is the formation of a political union, however member states are unlikely to find this appealing.

The Greek crisis exposes the design failures of the Eurozone. These have long been known. Right from the start of the Eurozone many economists warned that these design failures would lead to problems and conflicts within the currency union, and that the Eurozone in the end would fall apart if these failures were not corrected. See, for instance, Feldstein (1997), Friedman (1997), or De Grauwe (1998).[1]

The first signs of the disintegration of the Eurozone are visible today. Grexit is temporarily avoided. The new punitive program that is imposed on Greece is likely to lead to a Grexit. But that is unlikely to be the end. After Grexit the nature of the Eurozone will have been changed from a permanent union to a temporary one. This is likely to destabilise the monetary union each time a recession produces rising budget

1 See Baldwin (2015) for a list of VoxEU columns that discussed the flaws early on.

deficits and debt levels. After Grexit there are likely to be more exits; an unravelling of the union.

'Visionary' European politicians brushed aside the warnings from economists in the 1990s that the euro was based on a flawed construction. Nothing would stop their great monetary dream, certainly not the objections of down-to-earth economists. What are these design failures?

The Eurozone is not an optimal currency area

The European monetary union lacked a mechanism that could stop divergent economic developments between countries. Some countries experienced a boom, others a recession. Some countries improved their competitiveness, others experienced a worsening. These divergent developments led to large imbalances, which were crystallised in the fact that some countries built up external deficits and other external surpluses.

When these imbalances had to be redressed, it appeared that the mechanisms to redress the imbalances in the Eurozone ('internal devaluations') were very costly in terms of growth and employment, leading to social and political upheavals. Countries that have their own currency and that are faced with such imbalances can devalue or revalue their currencies.

In a monetary union, countries facing external deficits are forced into intense expenditure reducing policies that inevitably lead to rising unemployment. This problem was recognised by the economists that pioneered the theory of optimal currency areas (Mundell 1961, McKinnon 1963, Kenen 1969; along with later important contributions, including Bayoumi and Eichengreen 1993, Krugman 1993).

- The standard response – based on the theory of optimal currency area thinking – is that monetary union members should do structural reforms so as to make their labour and product markets more flexible.

By increasing flexibility through structural reforms the costs of adjustments to asymmetric shocks can be reduced and the Eurozone can become an optimal currency area. This has been a very influential idea and has led Eurozone countries into programs of structural reforms.

It is often forgotten that although the theoretical arguments in favour of flexibility are strong, the fine print of flexibility is often harsh. It implies wage cuts, fewer unemployment benefits, lower minimum wages, and easier firing. Many people hit by structural reforms resist and turn to parties that promise another way to deal with the problem, including an exit from the Eurozone.

- From an economic point of view, flexibility is the solution; from a social and political point of view, flexibility is the problem.

There is a way to reduce the costs of the adjustment to imbalances in a monetary union if this adjustment can be made to operate symmetrically. Thus, if the inevitable austerity by the deficit countries can be compensated by fiscal stimulus in the surplus countries, the negative aggregate demand effects in the former can be compensated by positive demand effects in the latter (see Wolf 2014).

Such a symmetric adjustment mechanism did not operate in the Eurozone after 2010, when the large external imbalances in the Eurozone were exposed. The deficit countries were forced into austerity while the surplus countries tried to balance their budgets. The result has been to create a deflationary bias in the Eurozone.

This is illustrated in Figures 1 and 2.

- Figure 1 compares the evolution of real GDP in the Eurozone with real GDP in the US and in the EU-countries not belonging to the Eurozone (EU10).

The difference is striking. Prior to the financial crisis, the Eurozone real GDP was on a slower growth path than in the US and EU10. Since the financial crisis of 2008 the divergence has increased even further. Real GDP in the Eurozone stagnated and in 2014

was even lower than in 2008. In the US and EU10, one observes (after the dip of 2009) a relatively strong recovery.

- Figure 2 shows the evolution of unemployment in the same group of countries.

We observe the same phenomenon. A recovery in the US and EU10 after 2010, evinced by the decline in unemployment. This contrasts with the Eurozone where unemployment continued to increase so that in 2014 it was almost twice as high than in EU10.

Figure 1. Real GDP in Eurozone, EU10, and US (prices of 2010)

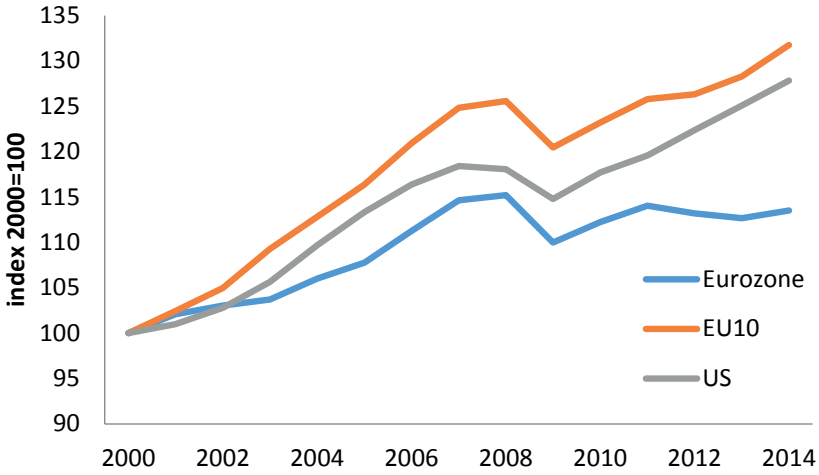
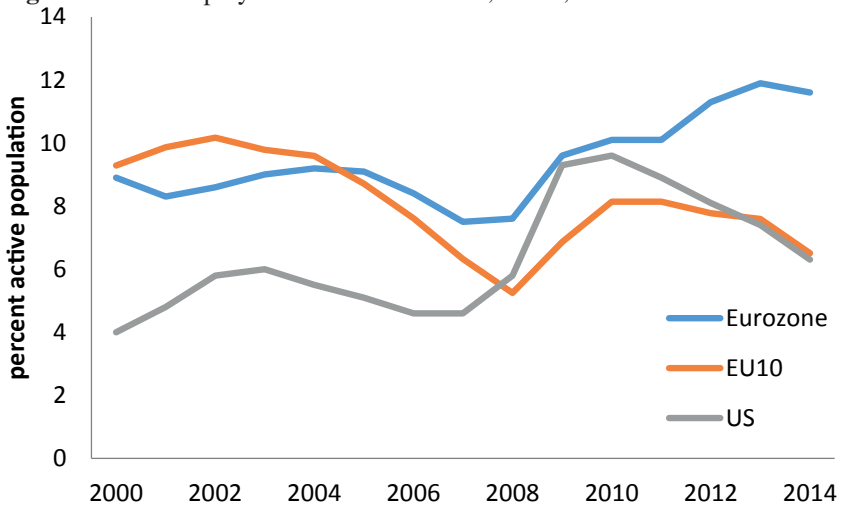


Figure 2. Unemployment rate in Eurozone, EU10, and US



Source: European Commission, Ameco database.

Figures 1 and 2 also teach us that the Eurozone has failed dismally in delivering on the promises that were made at the start of the union; that is, that monetary union would lead to more economic growth and employment. The opposite has occurred. Member countries of the Eurozone have on average experienced less growth and more unemployment than the EU countries that decided to stay out of the Eurozone. Such an outcome, if maintained, undermines the social consensus in favour of a monetary union.

Fragility of the sovereign in the Eurozone

When the Eurozone was started, a fundamental stabilising force that existed at the level of the member-states was taken away from these countries. This is the lender of last resort function of the central bank. Suddenly, member countries of the monetary union had to issue debt in a currency they had no control over. As a result, the governments of these countries could no longer guarantee that the cash would always be available to roll over the government debt. Prior to entry in the monetary union, these countries could, like all stand-alone countries, issue debt in their own currencies thereby giving an implicit guarantee that the cash would always be there to pay out bondholders at maturity. The reason is that as stand-alone countries they had the power to force the central bank to provide liquidity in times of crisis.

What was not understood when the Eurozone was designed is that this lack of guarantee provided by Eurozone governments in turn could trigger self-fulfilling liquidity crises (a sudden stop) that would degenerate into solvency problems. This is exactly what happened in countries like Ireland, Spain and Portugal.[2]

2 Greece does not fit this diagnosis. Greece was clearly insolvent way before the crisis started, but this was hidden from the outside world by the fraudulent policy of the Greek government to conceal the true nature of the Greek economic situation (see De Grauwe 2011).

- When investors lost confidence in these countries, they massively sold the government bonds of these countries, pushing interest rates to unsustainably high levels.
- The euros obtained from these sales were invested in 'safe countries' like Germany.

As a result, there was a massive outflow of liquidity from the problem countries, making it impossible for the governments of these countries to fund the rollover of their debt at reasonable interest rates.

This liquidity crisis in turn triggered another important phenomenon that we have documented in the previous section. It forced countries to switch-off the automatic stabilisers in the budget.

The governments of the problem countries had to scramble for cash and were forced into quick austerity programs by cutting spending and raising taxes. A deep recession was the result. The recession in turn reduced government revenues even further, forcing these countries to intensify the austerity programs. Under pressure from the financial markets and the creditor nations, fiscal policies became pro-cyclical pushing countries further into a deflationary cycle. In short:

- What started as a liquidity crisis degenerated, in a self-fulfilling way, into a solvency crisis.

Thus, we found out that financial markets acquire great power in a monetary union. They can force countries into a bad equilibrium[3] characterised by increasing interest rates that trigger excessive austerity measures, which in turn lead to a deflationary spiral that aggravates the fiscal crisis, (see De Grauwe 2011, De Grauwe and Ji 2013). This was the same problem as that identified by Calvo (1988) and Eichengreen and Hausmann (2005) in emerging countries that are afflicted by an 'original sin' that forces them to borrow in foreign currencies.

3 The dynamics that lead to bad equilibria are similar to those analysed by Obstfeld (1986) in the context of fixed exchange rate regimes. See also Gros (2007).

Thus, in a monetary union, sovereigns singled out by financial markets cannot defend themselves unless they get help from other countries and from the ECB. But these are not willing to do this so easily.

The ECB recognised this problem when it started its OMT-program in 2012. This certainly helped to pacify financial markets at that time and avoided the collapse of the Eurozone. The issue arises of how credible the OMT-program is for future use. The ECB has been unwilling to use it during the latest Greek crisis. This refusal was based on the view that the Greek government is insolvent and, therefore, liquidity provision by the central bank is not the right remedy. This can lead to doubts about the future willingness of the ECB to provide liquidity to future governments in times of crisis.

Conclusion

The Eurozone crisis that emerged after 2010 was the result of a combination of two design failures.

- First, booms and busts continued to occur at the national level, leading to large external imbalances.

The lack of a smooth mechanism to correct for these imbalances created large economic and social costs.

- Second, the stripping away of the lender of last resort support from member states allowed liquidity crises to emerge when the booms turned into busts.

These liquidity crises then forced countries to eliminate another stabilising feature that had emerged after the Great Depression; that is, the automatic stabilisers in the government budgets. As a result, some countries were forced into bad equilibria.

As economists we should think harder about what happens to political systems when countries are forced into bad equilibria. As we have seen, in many countries where this happened, the political systems were badly shaken and extreme parties either increased

in importance or came to power. In several of these countries the newly emerging political parties exhibit an open hostility to the monetary union and promise a better future outside the Eurozone.

When individual countries in a currency union get into debt problems, whether of their own making or not, they cannot stand on their own feet. They need the help of other countries and of the ECB. But this help is not unconditionally available. This leads to a potential for political conflicts between member-states of the union.

Many argue that countries can avoid being pushed into a debt crisis by adhering to strict fiscal discipline. Surely this is the proper response to what happened in Greece. But it is not for most other Eurozone countries that experienced a debt crisis after 2010.

- This 'discipline' view disregards a fundamental feature of a capitalistic system, which is that it is characterised by booms and busts; bubbles and crashes.

Booms are wonderful. Busts lead to misery for millions. In addition, they lead to dramatic increases in government budget deficits and debt levels even in countries following orthodox fiscal policies (Reinhart and Rogoff 2009, Shularick and Taylor 2012). I have argued here that the Eurozone is ill-prepared to face this instability of a capitalistic system.

The previous discussion points in the direction of a possible solution – it can only be provided by a political union. The latter does two things. Firstly, it can reduce too large divergences in macroeconomic policies that have often been the source of large economic imbalances between countries. Secondly, a political union provides for an automatic and silent assistance between countries.

But there's the rub. Most Eurozone countries are not prepared to step into a political union because they do not want to create a system of automatic assistance. Their mutual distrust is too large to do this.

The conclusion I draw from this today is the same as the conclusion I drew twenty years ago. If there is no willingness to step into a fiscal union (which can only exist in a political union), the euro has no future.

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Causes of Eurozone crises

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No-one is optimistic about the Eurozone's prospects. This column highlights the major causes of the Eurozone crisis, highlighting that many US economists thought the euro a bad idea from the outset. Previous emerging market crises have important lessons for Europe – if Alexis Tsipras were able to shift gears in the way that Kim Dae Jung did in Korea, he would better serve his country.

After six years of crisis in the Eurozone, it is hard to find anyone who is optimistic about its prospects. To make the monetary union work seems to require that the Member States relinquish more national sovereignty than they originally agreed to. Meanwhile the crisis has made the public in most of Member States less inclined to give up sovereignty than before, even if their elites ask them to.

American economists continue to be especially pessimistic about its prospects. They might be pardoned for thinking that many of their warnings have come true (Jonung and Drea 2009). Even Martin Feldstein's warning that the project would eventually result in worse political relations among the members – rather than better relations as intended – has lately turned out to have been surprisingly on target (1997).

But we pessimists should recall that the 13 American colonies were no more eager to give up their separate sovereignties in 1783, at the end of the American Revolution, than European countries are today. Yet, by 1789 and against all odds the colonies had agreed to federate as a single nation under the US constitution (Ellis 2015).

Three fundamental sources of Eurozone crises

The sources of Eurozone crises, past and future, can be divided into three (see Shambaugh 2012, Frankel 2015):

- Asymmetric shocks, where the problem is loss of ability to respond to national economic conditions via independent monetary policy or devaluation;

This problem is a way of saying that the members of the Eurozone don't meet the criteria for an optimum currency area. This was the main basis for the pessimism of most American economists before the crisis even happened. The optimal currency area criteria start with the need for a 'symmetry of shocks', that is, a high cyclical correlation.

It turned out that Eurozone members did indeed suffer from asymmetric shocks. Economic conditions in a country like Ireland during the first decade of the euro warranted a tighter monetary policy than was set in Frankfurt, and conditions after 2008 warranted an easier monetary policy.

- Fiscal policy, where the problem is the real and perceived moral hazard that the prospects for bailouts create for the incentive of member countries to exercise budget discipline;

Problem number 2, the fiscal problem, was not part of the traditional optimal currency area criteria. That the architects of the euro in 1991 focussed sharply on this issue surprised many economists at the time (e.g. Buiter et al. 1993, Frankel 1993, and Beetsma and Uhlig 1999). The architects put fiscal and debt limits at the heart of the Maastricht criteria for entry (3% of GDP and 60%, respectively), they adopted a 'No Bailout Clause' (1991) and later they agreed the Stability and Growth Pact (1997) and its successors.

The Founders deserve credit for recognising the moral hazard problem early, in that fiscal policy constraints had not previously been in the scholars' lists of optimal currency area criteria. On the other hand, the elites were forced to do it for political

reasons. Voters in Germany and some other Northern European creditor countries were opposed to the euro project on the grounds that 'we know you elites will have us bailing out a profligate Mediterranean government before you're done'.

- Banking, where the problem is that responsibility for financial regulation was left at the national level while monetary policy was moved to the ECB.

Problem 3, banking supervision, was at best mentioned in passing in the 1990s.

Almost no thought was given to the possibility of moving deposit insurance, supervision, or bank resolution to the ECB level. Fortunately the Eurozone has taken some steps in the direction of banking union since Mario Draghi became ECB president.

Seven mistakes

Arguably, if the Eurozone had gotten through its first decade or two without a serious crisis, some of the structural fundamentals might have evolved favourably, as they did early in US history. A monetary union tends to raise the trade links and raise the symmetry of shocks among the members, so that it may meet the optimal currency area criteria ex post even if it does not ex ante. But how can the Eurozone get through a decade or two without a crisis?

One can take as given that the member countries wanted to go ahead and form a monetary union at the end of the 1990s, and even take as given that they weren't yet ready to give up sovereignty with respect to fiscal policy and banking regulation, and yet identify a variety of ways in which it could have been done better. Ivory tower observers are generally too quick to point out the mistakes made by political leaders, often failing to recognise the constraints they were under at the time. Nevertheless, one can identify at least seven mistakes:

- The membership should not have been expanded so quickly;

In particular, Greece was not, in truth, ready to be admitted as early as 2001. Given the absence of any provision for countries to leave the euro, it would have paid to take more time with the entry process, even if it meant putting off some countries forever.

- Soon after the euro's inauguration, it became very clear that the attempt to address the fiscal-discipline problem had failed: the fiscal criteria were violated repeatedly, by countries large and small;

The Stability and Growth Pact had no teeth and no credibility. In other words, the moral hazard problem, though correctly identified, had not been effectively addressed. Virtually all members had violated the ceilings well before the Eurozone crisis began in late 2009 (e.g. Feldstein 2009). When they received letters from Brussels informing them that their budget deficits exceeded the ceilings and needed to be corrected, they would invariably respond with optimistic forecasts that strong growth would soon bring the deficits below the ceilings. Repeated attempts to strengthen the Stability and Growth Pact failed, perhaps because they did not take into account this problem of over-optimistic forecast (Frankel and Schreger 2013).

- When interest rate spreads of Greece and other periphery countries fell almost to zero after joining the euro (2002-07) despite substantial violations of the fiscal criteria, this was viewed as a good thing rather than a bad thing;

But it is clear, at least in retrospect, that low spreads among Eurozone countries were direct real-time evidence that the moral hazard problem had not been solved.

Why did Mediterranean country spreads relative to Germany all but disappear? Private investors should bear some blame for having pushed the throttle all the way to 'risk on' during this period. They, however, would point to top ratings that the bonds received from the rating agencies. Rating agencies should bear some blame, but they would point to the readiness of the ECB to accept the periphery bonds as collateral (Frankel 2012).

In effect, markets must have believed that any countries that got into debt trouble would be bailed out. When an American state gets too deeply into debt, its creditors demand higher interest rates (Bayoumi et al. 1995).

- The fourth mistake was the failure to send Greece to the IMF early in the crisis (Frankel 2011);

In January 2010, the need for the IMF should have been clear. Rather than going into shock, leaders in Frankfurt and Brussels could have welcomed the Greek crisis as a useful opportunity to establish a precedent for the long-term life of the euro.

The idea that such a debt crisis would eventually arise somewhere in the Eurozone cannot have come as a surprise. After all, that is why the architects had written the Maastricht fiscal criteria, the No Bailout Clause, and the Stability and Growth Pact.

When the rules failed and the crisis came, the leaders should have thanked their lucky stars that the first test case had arisen in a country that met two characteristics admirably. First, the Greek government had broken the rules so egregiously and so frequently that Europe's leaders could, with a clear conscience, be firm. The alternative was to risk establishing the precedent that all governments are ultimately to be bailed out, with all the moral hazard headaches that that precedent implies.[1] Second, the Greek economy was small enough to make it feasible for Europe to come up with the funds necessary to insulate others, who were vulnerable to contagion but not as blameworthy, for example Ireland.

European leaders should also have thanked their stars that the IMF even existed. Instead of acting as if such a crisis had never been seen before, they should have realised that imposing policy conditionality in rescue loan packages is precisely the IMF's job. International politics is less likely to prevent the IMF from enforcing painful fiscal

1 In the case of the US, the important precedent was the decision to let eight states (plus Florida, then a territory) default on their debts in 1841-42 rather than bail them out. Partly as a result, nobody expects the federal government to bail out Illinois when it gets over-indebted today.

retrenchment and other difficult conditions than it is among regional neighbours or other political allies. Europe is no different in this respect than Latin America or Asia.

But the reaction of leaders in both Frankfurt and Brussels was that going to the IMF was unthinkable, that this was a problem to be settled within Europe. They chose to play for time instead, to treat insolvency as illiquidity.

Their argument was that such steps would result in contagion to Ireland, Portugal, Spain and others. But they subsequently got the contagion that they feared anyway. The contagion only became harder to fight, when leaders' statements had lost credibility and the spreads on these countries shot up to levels so high as to make the arithmetic of debt dynamics impossible.

What started as a small 'Greece fire' became harder to contain after it jumped the natural firebreak and spread to other parts of the forest.

- The fifth mistake was the failure to write down more of the debt and to do it earlier, at a time when most of the debt was still held by private creditors;

They could usefully have taken a 'haircut', which is harder for public sector creditors (particularly the IMF, ECB, European Financial Stability Facility, and European Stability Mechanism). But again, leaders in both Frankfurt and Brussels insisted in 2010 and 2011 that writing down the debt was unthinkable.

- The sixth mistake is the stubborn belief that fiscal austerity is not contractionary, even in the short run;

Some even insisted that it can raise GDP and lower debt/GDP ratios.

The mistake was made especially by many in Germany and other creditor countries. The IMF was forced to go along with over-optimistic forecasts of its programmes' effects on growth, because its rules specified that it was not allowed to participate in the country programmes unless it could forecast that they would lead to a return to debt sustainability in the form of declining ratios of debt to GDP.

In the event the fiscal austerity – coming as it did at the wrong time – worsened the recessions in Greece and other periphery countries. As a result, debt/GDP ratios, far from coming down, rose at an accelerated rate. A simple Keynesian multiplier model would have given better predictions (Blanchard and Leigh 2013).

- Needless to say, the Greeks made plenty of mistakes too.

When Syriza came to power

Let us pick up the story from when the Syriza government came to power in January 2015. The new Greek Prime Minister, Alexis Tsipras, had the chance to play a role for his country analogous to the roles played by Korean President Kim Dae Jung in 1997 and Brazilian President Luiz Inácio Lula da Silva in 2002. Both of those presidential candidates had been long-time men of the left, with strong ties to labour, and were known to place little priority on fiscal responsibility or the virtues of markets. Both were elected at a time of economic crisis in their respective countries. Both confronted financial and international constraints in office that had not been especially salient in their minds when they were opposition politicians. Both were able to make the mental and political adjustment to the realities faced by debtor economies. As a result, both were able to lead their countries effectively.

They pursued needed reforms. Some of these were 'conservative' reforms (or 'neo-liberal') that might not have been possible under more mainstream or conservative politicians.

But Kim and Lula were also able to implement other 'liberal' reforms consistent with their lifetime commitment to reducing income inequality. Korea began to rein in the chaebols, the country's big family-owned conglomerates. Brazil expanded the Bolsa Familia plan, a system of direct cash payments to households that successfully lifted millions out of poverty.

Tsipras and his Syriza party spent their first six months in office still mentally blinkered against financial and international realities. A career as a political party apparatchik is probably not the best training for being able to see things from the perspective of other points on the political spectrum, other segments of the economy, or other countries. This is true of a career in any political party in any country but especially one on the far left or far right.

The Greek Prime Minister seemed to think that he could strengthen his bargaining position by calling the 5 July 2015 referendum on whether to accept terms that had been demanded previously by Germany and the other creditor countries. If he were reading from a normal script, he would logically have been asking the Greek people to vote 'yes' on the referendum. But he was asking them to vote 'no', of course, which they did in surprising numbers.

As a result – and contrary to his apparent expectations – the only bargaining position that was strengthened was that of the Germans who felt the time had come to let Greece drop out of the euro. The Greek leadership eventually discovered that its euro partners, predictably, were not prepared to offer easier terms than they had been in June, and in fact asked for more extensive concessions as the price of a third bailout.

Not until a week after the referendum did Mr Tsipras finally begin to face up to reality. The only possible silver lining to this sorry history is that some of his supporters at home may – paradoxically – now be willing to swallow the bitter medicine that they had opposed in the referendum. Like Kim Dae Jung and Lula, he may be able to garner political support from some on the left who figure, 'if my leader now says these unpalatable measures are necessary, then it must be true'. As they say, only Nixon can go to China.

None of this is to say that the financial and international realities are necessarily always reasonable. Sometimes global financial markets indulge in unreasonable booms in their eagerness to lend, followed by abrupt reversals. That describes the large capital inflows into Greece and other European periphery countries in the first ten years after the euro's

1999 birth. It also describes the sudden stop in lending to Korea and other emerging market countries in the late 1990s.

Foreign creditor governments can be unreasonable as well. The misperceptions and errors on the part of leaders in Germany and other creditor countries have been as bad as the misperceptions and errors on the part of the less-experienced Greek leaders. The belief that fiscal austerity raises income rather than lowering it, even in the short run, was one mistaken perception. As noted, the refusal to write down the debt in 2010 was also a mistaken policy.

A stubborn clinging to wrong propositions on each side has reinforced the stubbornness on the other side. The Germans would have done better to understand and admit explicitly that fiscal austerity is contractionary in the short run. The Greeks would have done better to understand and admit explicitly that the pre-eminence of democracy does not mean that one country's people can democratically vote for other countries to give them money.

Understanding the poor negotiated outcome

In terms of game theory, the fact that the Greeks and Germans have different economic interests is not enough to explain the very poor outcome of negotiations to date. The difference in perceptions has been central. 'Getting to yes' in a bargaining situation requires not just that the negotiators have a clear idea of their own top priorities, but also a good idea of what is the top priority of the other side.

We may now be facing a 'bad bargain' in which each side is called upon to give up its top priorities. On one side, Greece shouldn't expect the ECB to be willing explicitly to write down the debt it holds. On the other side, the creditors shouldn't expect Greece to run a substantial primary budget surplus.[2]

2 Eichengreen and Panizza (2014) find from the historical record that the large primary surpluses envisioned by the Troika for the periphery countries over the next ten years are unlikely to be achievable.

- A 'good bargain' would have the creditors stretch out lending terms even further so that Greece doesn't have to pay over the next few years and would have the Greeks committing to structural reforms that would raise growth.

One hopes that the awful experience of the recent past has led both sides to clearer perceptions of economic realities and of top priorities. Such evolution is necessary if the two sides are to arrive at a good bargain rather than either a bad bargain or a failure of cooperation altogether. The non-cooperative equilibrium is that Greek banks fail and Greece effectively drops out of the euro. This may be even worse than a bad bargain, though I am not sure.

A recurrent theme

A recurrent theme of the Greek crisis ever since it erupted in late 2009 is that both the Greeks and the euro creditor countries have been reluctant to consider that lessons from previous emerging market crises might apply to them. After all, Greece was not a developing country but rather a member of the euro. And one should not underestimate the opposition that reforms will continue to face among Greeks. But the emerging market crises do have important lessons for Europe. If Tsipras were able to shift gears in the way that Kim Dae Jung did in Korea and Lula did in Brazil, he would better serve his country.

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The Eurozone crisis and foreign debt

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The Eurozone crisis started as a sudden stop to cross-border capital inflows. This chapter suggests that countries with current-account surpluses did not endure lasting financial stress. The balance of payments crisis then became a public debt crisis, where the public debt which mattered was that owed to foreigners. Overall, the crisis proved much more difficult to deal with given the predominance of bank financing, thinly capitalised banks, the absence of a common mechanism to deal with failing banks, and the absence of a common lender of last resort.

The euro crisis started as a classic 'sudden stop' to cross-border capital inflows. As boom turned into bust, governments lost their tax base and had to assume private debt, thus creating a public debt crisis. The highly leveraged banking system of the Eurozone, tightly linked to national governments, provided a multiplier, which made the crisis systemic.

From balance of payments to public debt crisis

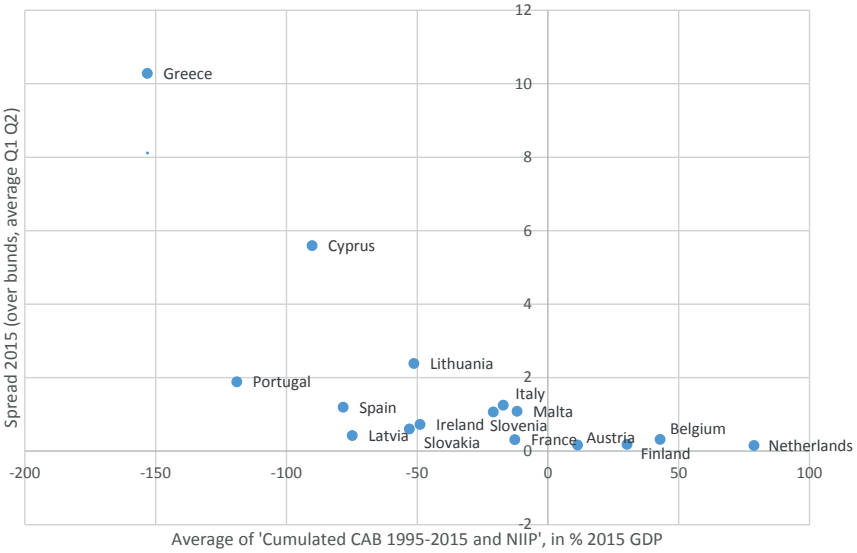
The Eurozone crisis is considered in official circles essentially as a sovereign debt crisis. This is partially due to the fact that the crisis started with the sovereign debt problems of Greece at the turn of 2009/10 (and Greece remains the only unresolved issue in 2015). Moreover, European policymakers had to deal mostly with the problems of member states which had problems refinancing their public debt, losing sight of the root causes of these problems.

One simple observation proves the key role of the external – or balance of payments – origin of the crisis.

- No country which had in 2008 a current-account surplus and/or a positive net external asset position had to endure lasting financial stress – irrespective of the level of its public debt.

For example, Belgium, which had at the outset of the crisis a higher (public) debt to GDP ratio than Portugal, never experienced serious financial stress and its risk premium has, on average, been over the entire period less than 90 basis points. Portugal, by contrast, had to pay such a high risk premium that it even lost market access at some point and had to be bailed out. The reason for this difference is that Belgium had run large current-account surpluses for a long time prior to the crisis, and had thus accumulated a net foreign creditor position of about 50% of GDP, whereas Portugal had run large current-account deficits, accumulating a large foreign debt in the process (close to 100% of GDP).

Figure 1. Foreign asset position and risk premia



Source: Eurostat 2015

Note: Horizontal axis depicts the simple average of the 'cumulated current- account from 1995-2015' and the 'Net international investment position of 2013' (Excluding Luxembourg)

The underlying reason for the current deficits of the (now) so-called peripheral countries had not always been excessive public spending. In the cases of Ireland and Spain, the public sector had been running substantial surpluses before the crisis, resulting in public debt-to-GDP ratios which, at the moment the crisis started, were considerably below the European average. The underlying problems of these countries had been that domestic real estate booms had been financed by foreign capital inflows. When these inflows ended the real estate booms turned into bust and the depression of economic activity which followed led to large deficits and a rapid increase in public debt. Moreover, the public sector had to take over part of the debt incurred by the private sector, increasing public debt even further (Reinhard and Rogoff 2009).

This is how a balance of payments crisis became a public debt crisis. But the public debt which matters was that owed to foreigners. Domestic residents by and large kept financing their own government (with one exception: Greece) whereas foreign investors, especially those in the surplus countries, were selling at almost any price once they realised that public debt was no longer riskless.[1]

Figure 1 shows the relationship between foreign asset position and risk premia. These have change over the life time of crisis. Hence this chart uses an average over 2010 2014.

The severity of the crisis = strength of preceding boom

Why was the crisis so severe? There are two elements which determine the difficulties engendered by a sudden stop. On both accounts, the euro crisis had to be severe.

- The size of the capital inflows (flow aspect).

Current-account deficits within the Eurozone had reached unprecedented proportions, topping 12% of GDP for Portugal and Greece, for example. When the inflows stopped,

1 Only the IMF refused to acknowledge this even in 2010 (Cotarelli et al. 2010).

domestic demand in these economies had to crash because it was not possible to increase exports immediately to make up for the missing capital inflows.

- Capital inflow duration (stock aspect).

These current-account deficits lasted for a very long time, in some cases over 10 years, leading to a large build-up of debt. The legacy debt that has to be serviced when the boom ends is roughly equal to the product of the imbalances and the length of time they persisted. As the boom preceding the euro crisis had been unprecedented on both accounts, the crisis was likely to be of unprecedented proportions as well.

Was it the fault of the euro?

The introduction of the common currency had led to the illusion that current-account imbalances within the Eurozone would cease to matter. But this was by far not the only enabling factor, as it was seen in the context of a global phenomenon, namely the Great Moderation.

The success of central banks in stabilising the economy during the late 1990s and early 2000s had led to the widespread illusion that the business cycle was dead and that financial risk had been abolished. This provided the backdrop for a global credit boom of unprecedented proportions, both internally and across nations.

- The US also had a real estate boom fuelled by easy credit. It was actually the US Subprime Crisis, which started the Global Crisis in 2007/8.
- Countries outside the Eurozone were also running extraordinarily large deficits for a long time (e.g. Iceland, or (then) non-euro EU member countries like the Baltic States, whose current-account deficits topped 20% of GDP).

The large and persistent current-account imbalances and associated capital flows within the Eurozone must thus be seen as the local manifestation of a global credit boom.

Undercapitalised banks as a crisis multiplier

A bank-based financial system can make a crisis more severe. Banks usually operate on a very thin layer of capital. Prior to the crisis, their capital ratios were often less than 5%, meaning that a bank could not survive a loss of more than 5% of its assets (Gros and Micossi 2008).

When all banks are thinly capitalised and they all face large losses on the credits they extended during the boom, the entire financial system is at risk. But modern economies cannot survive without the basic functions, like the payments system, which are performed by banks. This creates the potential for runs on banks where the fear of large losses can be self-validating (Diamond and Dybwig 1983).

The bank-centric nature of Europe's financial system (ESRB 2015) thus makes it more exposed to financial crisis.

The bank–sovereign nexus

In Europe the banks and the sovereign are usually so closely linked that one cannot survive without the other. This has two elements.

- The sovereign is the ultimate guarantor of the banks; but
- The banks are often key holders of public debt.

In many countries banks hold multiples of their capital in government debt. This implies that the insolvency of a government would also wipe out the capital of the banks and bankrupt them as well. But an insolvent government would no longer be able to save its banks.

There was thus the potential for a self-reinforcing, negative feed-back loop between the banks and their government. Doubts about the solvency of the government lead to doubts about the solvency of banks, which in turn weakens the economy and thus makes the situation even worse for the sovereign whose tax revenues decline.

The key element in this feed-back loop is that banks hold large amounts of the debt of *their own government*. If banks were holding a diversified portfolio of the debt of all Eurozone governments, the feed-back loop would be much weaker since the insolvency of any one government would not wipe out the capital of the banks on its territory (Gros 2013).

Sovereigns without a central bank

The Eurozone is not the only area in the world where banks finance a large part of public debt. The unique aspect of the bank sovereign nexus in the Eurozone is that the sovereign can no longer rely on its central bank for emergency financing in a crisis (de Grauwe 2011).

In a country with its own currency, government debt is riskless since before going bankrupt the government will force the central bank to print the money it needs to service its debt. This will then create inflation and bond holders will lose in real terms, but in nominal terms there is no reason to doubt the ability of the government to service its debt and save its banks (Calvo 1988).

By contrast, the ECB is actually forbidden to finance governments. This interdiction was only partially, and in a limited way, overcome when the ECB created its Open Market Transactions (OMT) programme of 2012 under which it would, under strict conditions, be able to support the government debt market of individual member countries.

… and a central bank without a sovereign

Emergency liquidity provision is essential in any financial crisis as during the crisis period even solvent entities (banks and governments) tend to have liquidity problems. Ex ante, it is, of course, never certain who is solvent and faces only liquidity problems. It is nevertheless clear that ex post the cost of the crisis and thus the extent of insolvencies will be much reduced if there is a lender of last resort.

In a country with its own currency the lender of last resort will be the central bank, which not only can support the national treasury in times of need, but can also rely on the taxing power of the government to be compensated for any losses that arise if it makes losses on liquidity provision. This is also not the case in the Eurozone, where the ECB cannot rely on a single treasury to be compensated for any losses it might make on liquidity provision. The official Emergency Liquidity Assistance, which has been widely used relies instead on the guarantee of national governments, thus reinforcing the negative feed-back loop between the banks and the sovereign.

Conclusions

The Eurozone crisis is best viewed as a particularly virulent manifestation of the bust that followed the global credit boom engendered by the Great Moderation.

- At the outset of the Global Crisis, it appeared that the US and the Eurozone were about even in terms of house prices increases and leverage (increase in credit relative to GDP).
- In Europe, the crisis proved much more difficult to deal with given the predominance of bank financing, thinly capitalised banks, and the absence of a common mechanism to deal with failing banks and the absence of a common lender of last resort for governments.

A global credit of similar magnitude is unlikely to return for at least a generation or two, but regional credit booms (and busts) seem unavoidable. It follows that another EZ crisis is unlikely for some time, but regional crises will recur and could still wreak havoc through the bank–sovereign feedback, which has still not really been cut, as this summer's experience in Greece shows.

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International financial flows and the Eurozone crisis[1]

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In the lead up to the global financial crisis, there was a substantial credit boom in advanced economies. In the Eurozone, cross-border flows played an especially important role in the boom-bust cycle. This column examines how the common currency and linkages between member states contributed to the Eurozone crisis. A very strong relationship between pre-crisis levels of external imbalances and macroeconomic performance since 2008 is observed. The findings point to the importance of delinking banks and sovereigns, and the need for macro-financial policies that manage the risks associated with excessive international debt flows.

There was an extraordinary international bank-intermediated credit boom among the advanced economies during 2003-2007. There is considerable evidence that financial crises are often preceded by credit booms (Gourinchas and Obstfeld 2012), so the Eurozone crisis was out of line with experience. One distinctive features was the way that cross-border flows amplified differences in loan growth across surplus and deficit countries (Lane and McQuade 2014).

Given the role of credit on the way up, the unravelling of the credit booms and a contraction in cross-border flows have been central features of the subsequent Global Financial Crisis and Eurozone crisis. While global factors certainly played a critical role in this boom-bust cycle, the role of cross-border flows was especially intense inside

1 This article is based on research funded by the Irish Research Council.

the Eurozone due to the much higher scale of intra-zone cross-border integration of banking and bond markets (Lane 2013a, 2015a).

Rather, the evidence indicates that the 2003-2007 period can be characterised as a 'credit supply' shock by which the global financial system was more willing to tolerate large net debt flows to these advanced economies. There is a large literature that debates the sources of this credit shock, with the low policy rates adopted by advanced central banks, financial innovations (such as new types of securitisation), and shifting beliefs about risk levels and risk absorption capacity combined to foster an extraordinary boom in international capital flows (Lane 2013a).

Role of the euro

The common currency facilitated cross-border financial flows, since euro-denominated debt transactions within the Eurozone could be viewed as having zero currency risk. In addition, the deep swap markets between the euro and the major currencies also allowed Eurozone banks to obtain foreign-currency funding (especially dollar funding in US money markets) and hedge the currency risk at low cost (Lane 2015b). The low risk nature of this funding was further underpinned by access to Eurosystem liquidity to banks in all member countries, which was additionally secured by the ECB collateral policy of treating the sovereign bonds of all member countries as low risk.

The debt inflows took different forms across the various European peripheral countries.

- For Ireland and Spain, the debt inflows helped to fuel large-scale domestic property booms; and,
- For Greece and Portugal, it was the sovereign (or quasi-fiscal) institutions that were at the forefront of issuing international debt.

Among these countries, the motivations underlying the willingness to absorb a large increase in external debt liabilities also varied. Optimistic types extrapolating continued appreciation in property prices played a role in Ireland and Spain. Governments and

private-sector entities possibly seeking to delay adjustment, along with downshifts in long-term growth projections, played a role in Greece and Portugal (Lane and Pels 2012).

Where the private sector incurred the debt liabilities:

- Governments were insufficiently wary of the possible contingent risk exposures (both direct bailout costs and the indirect impact of financial crises on fiscal balances);
- Fiscal policy was not sufficiently counter-cyclical (vis-à-vis the financial cycle), with the required scale of prudential fiscal surpluses above historical norms or politically-feasible levels; and,
- Macro-prudential measures to cool the expansion in domestic credit were not sufficiently aggressive and/or implemented too late in the boom phase.

The Eurozone crisis has also vividly highlighted the tensions involved in resolving external funding crises when creditors and debtors share a common currency and are deeply intertwined in terms of economic and political linkages (Lane 2013b). There are clear conflicts of interest between creditors and debtors in terms of the design of bailout programmes and the potential role of debt restructuring mechanisms (both vis-à-vis banks and sovereigns), while financial stability spillovers are plausibly more intense inside a common currency area. Moreover, private-sector debt funding is arguably more fragile in a monetary union, since risk-averse investors can quickly shift out of riskier countries towards safer countries without taking on currency risk, which was reflected in the emergence of large Target 2 imbalances during the crisis, as peripheral banks replaced cross-border private funding with Eurosystem funding.

Ending the 'doom loop': Delinking banks and sovereigns

These considerations reinforce the importance of delinking banks and sovereigns, through the formation of a deep banking union, the imposition of limits on the domestic

sovereign bond holdings of banks and the introduction of efficient sovereign debt restructuring mechanisms (Corsetti et al 2015). In related fashion, the fragility of cross-border financial flows within a monetary union call for the formation of a common area-wide 'safe asset', along the lines of the European Safe Bonds (ESBies) advocated by Brunnermeier et al (2011).

While there have been multiple factors influencing the propagation of the European crisis, it is striking that there is a very strong correlation between the pre-crisis level of external imbalances and macroeconomic performance since 2008 (Lane and Milesi-Ferretti 2012, 2015). Sorting out the relative contributions of current account reversals and fiscal austerity (each also interacting with domestic credit contractions) in determining post-crisis output dynamics is a high priority for the research agenda of international macroeconomists.

Lessons for the future

Given the very painful experience with external adjustment, the lesson for the future is that macro-financial policies (including macro-prudential measures and the cyclically-adjusted stance of fiscal policy) should proactively seek to manage the risks attached with excessive net international debt flows. While this principle is recognised in the new 'macroeconomic imbalances procedure" (MIP), the identification of risk triggers and the design of appropriate interventions remains to be worked out.

More deeply, a greater degree of economic convergence among member countries should be associated with less financial divergence in terms of external imbalances and asymmetries in credit growth. To this end, the aspiration of the recent Five Presidents' Report is to promote economic convergence. Whether Europe has the political appetite to follow the agenda laid out in this report is a major question for the coming years.

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What future for the Eurozone?[1]

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The sovereign debt and banking crises of 2010-12 have led to significant changes in the institutions of the Eurozone. The credibility of common policies regarding budgetary discipline and economic convergence remains weak. This chapter proposes that the way forward is to gradually bring common economic policies under the oversight of the European Parliament and to strengthen the role of the Commission. The picture must be completed with getting national parliaments more involved in the European policy process. The present state of the Eurozone could be seen as a sort of political equilibrium, likely to be economically unstable.

A currency without a state

The euro is a currency without a state or economic policy institutions to ensure budgetary discipline and economic convergence amongst its members and protect them from large idiosyncratic shocks.[2]

As it were, convergence amongst the 12 countries that adopted the euro in 1999 was imperfect (ECB 2015b), not only in prices, wages and productivity, but also in the quality of institutions (Boltho and Carlin 2012, see also Figure 1). In the early years

1 The author is grateful to Fabrizia Peirce and Alexandra D'Onofrio for useful discussions and superb assistance with the data and bibliography, and to Marco Buti for helping remove some imprecision on governance arrangements.

2 The Delors Report (1989), which set out the blueprint of the economic and monetary union (EMU), pointed out that "monetary union is only conceivable if a high degree of economic convergence is achieved" (p. 14). The Report contained no discussion of the political underpinning of a monetary union, but the subsequent Treaty of Maastricht (1991) created the European Union as the forbearer of political union to come, together with the key institutions of monetary union.

of the euro, the single monetary policy generously accommodated divergent national policies (Micossi 2015), thus contributing to the build-up of unsustainable imbalances in peripheral countries.

When the Global Crisis struck, the absence of risk sharing arrangements to cushion the shock brought the common currency close to a breaking point. The poisonous cocktail of mistrust between the member states and lack of effective common instruments to meet the shock led not only to excessively tight monetary and fiscal policies, but to *a meltdown of confidence* that swell massively the real economic costs of the Crisis. In the process, it has become apparent that the construction does not have an exit door – as once again confirmed by the unfolding Greek drama. Thus, the Eurozone has evolved into a highly dysfunctional marriage entailing much suffering and discontent among its participants (Wolf 2014), not easy to fix but neither to abandon.[3]

The causes of the Eurozone crisis in 2010-12

In 2010-11 the Eurozone was hit by *a classical balance of payments crisis*, with attendant 'sudden stop' of cross-border capital flows to peripheral countries (Wolf 2014, Merler and Pisani-Ferry 2012). Contrary to the narrative developed by creditors in the European Council, the fiscal crisis in many peripheral countries was the result, rather than the cause, of the financial crisis (De Grauwe and Yuemei 2013, Wolf 2014).

The Greek fiscal crisis acted as a detonator. On one hand, it alerted the authorities and public opinions in Germany and the other 'core' countries to the possibility of large (and hidden) violations of the common fiscal rules.[4] On the other hand, it awakened investors in financial markets to the risk of a sovereign default in a system where the

3 Nothing new under the sun, notes on these developments Eichengreen (2015): "The single greatest failure to learn appropriate lessons from … earlier history was surely the decision to adopt the euro" (p. 382). The 1920s and 1930s have indeed shown the dangers of tying diverse countries to a single monetary policy under the gold standard, with large capital amounts flowing into higher interest rate countries for some time, and then suddenly coming to an end with dramatic destabilising consequences; and then, "the economic pain and political turmoil that would follow when the only available response was austerity".

4 The excessive deficit procedure of Article 126 TFEU with attendant Stability and Growth Pact (henceforth, the SGP).

provision of liquidity to ensure the orderly rollover of distressed sovereigns is not guaranteed – given the Treaty prohibitions of monetary financing of public deficits (Article 123 TFEU) and of bailing out insolvent sovereign states (Article 125 TFEU).

Contagion to other peripheral countries was fuelled by the joint announcement by Merkel and Sarkozy in Deauville in October 2010 that private investors would have to bear responsibility for their reckless lending, opening the way to a large write-down of private claims on Greece on the occasion of the second bailout agreement (summer-fall 2011). The flight of private capital brought to their knees one after the other the sovereign bond markets and the banking systems of Greece, Ireland, Portugal, Spain, Italy, and eventually Cyprus, setting in motion a disastrous *doom loop* between sovereign and bank crises. Throughout 2011 and the first half of 2012, instability in financial markets was heightened by the visible disagreements on how to proceed between the member states within the European Council as well as between the latter and the ECB.[5]

Coping with the sovereign debt crisis

As was mentioned, under German influence *the unfolding sovereign debt crisis* was read by the European Council as the consequence of reckless fiscal behaviour by some of its members. Thus, the Greek crisis marked the shift to restrictive fiscal policies for the Eurozone periphery at the very time when the private sector was cutting demand to deleverage and remedy impaired balance sheets (Koo 2015, Wolf 2014).

Austerity pushed the Eurozone economy into the double-dip recession of 2010-11, and largely explains the dismal economic performance of the Eurozone in international

5 For a full account of this 'game of chicken' between the European Council and the ECB, see Bastasin (2015).

comparison in 2010-14 (see Figure 1, upper quadrant).[6] After renouncing the exchange rate instrument, debtor countries found that they did not control their fiscal policy either (De Grauwe 2013).

Thus, the *strengthening of the economic governance* in the Eurozone took precedence over addressing the confidence crisis in financial markets that was threatening the very survival of the common currency. Fiscal rules came first, with new legislation reforming the Stability Pact (European Commission 2014b). Under a separate intergovernmental agreement, the members of the Eurozone introduced in their national legislation a hard rule mandating budgetary balance over the medium term.[7] The new *Macroeconomic Imbalance Procedure* broadened surveillance over economic policies to include such economic variables as external imbalances, competitiveness, asset prices, and the stock of public and private debt. Finally, the European Semester created a uniform cycle of decision-making for budgetary and economic policies of the member states.

However, over time it became all too clear that *fiscal discipline and economic reform would not suffice* to restore stability. There was also a need to:

- Mobilise substantial financial resources in support of adjustment programmes; and
- Convince financial markets that a sovereign default within the Eurozone was not in the offing.

Thus, the Eurozone eventually endowed itself with a permanent mechanism to provide conditional financing to member states in financial distress, the European Stability Mechanism (ESM), with effective firepower of up to half a trillion euro.[8]

6 As noted by Eichengreen (2015), there was a component of moralism in the attitude of creditor countries that complicated cooperation in countering the crisis and, on occasion, led to imposing unrealistic conditions upon the debtors, that later had to be revised. This, however, seemingly continues to be the price to pay for creditor countries' willingness to provide financial assistance to debtor countries and condone ECB interventions to stabilise financial markets. The paramount example is Greece (Wyplosz 2015), which by the latest bailout agreement will be asked once again to commit to a sizeable increase in its primary budgetary surplus (some 4.5% of GDP by 2018), in a falling economy with a quarter of the population unemployed, while everybody knows that the country will not pay a penny for its official debt service over the foreseeable future.

7 The Treaty on Stability, Coordination and Governance in the Economic and Monetary Union (2012).

8 The ESM was empowered to provide loans, intervene in primary and secondary sovereign debt markets and set up precautionary credit lines. A special instrument was set up within the ESM (capped at 60 billion) for recapitalising banks directly, but its utilisation was subject to strict pre-conditions making its use rather unlikely (Micossi 2013b).

In September 2012, the ECB launched its new Outright Monetary Transactions (OMT) programme, under which it would be prepared to intervene for unlimited amounts in secondary sovereign-bond markets of specific Eurozone members, de facto setting itself as the lender of last resort in Eurozone sovereigns.[9] Financial tensions that had plagued the Eurozone over the previous two years started to subside.

The OMT had been preceded, in June, by momentous meetings of the European Council and the Eurosummit that, by reaffirming "resolute action to address financial market tensions … and the commitment to preserve the EMU", de facto took off the table the option of Grexit – as it turned out, an important pre-requisite for re-establishing calmer conditions in financial markets. They promoted an ambitious programme of institutional build-up of the Union (later fleshed out by Van Rompuy et al. 2012) that notably included the banking union. And, finally, they approved a Compact for growth and jobs, acknowledging for the first time that positive policy action also was needed to raise employment and growth – even if the follow up was quite meagre.

Banking union and private risk sharing

To everyone's surprise, the very complex project of a banking union was agreed upon and put in place in about eighteen months, between June 2012 and December 2013.[10] Its main purpose is to *sever the doom loop between sovereign and banking crises*, notably by directly recapitalising failing banks, which in turn required to transfer supervision to the ECB through the new Single Supervisory Mechanism (SSM), and by

9 These interventions, however, would only be initiated after the country concerned had signed up to an economic programme with the EFSF (the temporary predecessor to the ESM) or the ESM, entailing "strict and effective conditionality". This clause may cast a shadow over the credibility of OMT, as it could make it difficult to activate in the presence of a banking crisis requiring swift action (Wyplosz 2015). The possibility of a precautionary programme may offer a way out, but requires the government's willingness to sign up to a memorandum of understanding on adjustment measures with the ESM well before the country has its back against the wall – something only far-sighted politicians may be willing to do.

10 It comprises the Single Supervisory Mechanism (SSM), a supranational resolution system for failing banks (the Single Resolution Mechanism, or SRM), and harmonisation but not centralisation of national deposit insurance (ECB 2015a). A Single Resolution Fund (SRF) fed by banks contributions will back up the SRM with the means to recapitalise banks emerging from liquidation, in case of need; over time (8 years) the SRF will be 'mutualised' (i.e. the funds will be deployable regardless of the national origin of the funds).

establishing a resolution system that would eradicate bankers' moral hazard by making shareholders and creditors responsible for losses (bail-in). The entry into force of the SSM, in November 2014, was preceded by a 'comprehensive assessment' of banks' capital position, asset quality and business models, so as to ensure that the integrated European banking system would be free of legacy losses. Once the system was up and running, banks could fail without endangering financial stability. More importantly, an effective mechanism of private risk-sharing, via capital markets, would protect national governments from the need to intervene to rescue their banks (Draghi 2014).

Gros (2013) has argued that with full banking union – also including a supranational deposit insurance – *a fiscal backup would become unnecessary*, since emerging bank losses would be taken up by the deposit insurance system at the federal level, as in the US Federal Deposit Insurance system. The argument is valid only for the crisis of individual banks; no matter how big the deposit insurance fund, it will in general not be sufficient to meet the losses resulting from a systemic banking crisis. Therefore, a fiscal backup is an unavoidable component of any monetary union.[11]

The growth question

The growth and productivity performance of the Eurozone has been rather unimpressive in international comparison well before the euro inception (Gordon 2012). According to the IMF's latest projections, "growth of only about 1.6% is expected over the medium term, with potential growth averaging around 1%. The output gap would close around 2020 with unemployment still near 9% and inflation reaching 1.7%, somewhat below the ECB's medium-term price stability objective" (IMF 2015b, p. 10). The question is whether the Eurozone set up has contributed to this dismal performance. Unfortunately, the plausible answer is yes for at least three reasons.

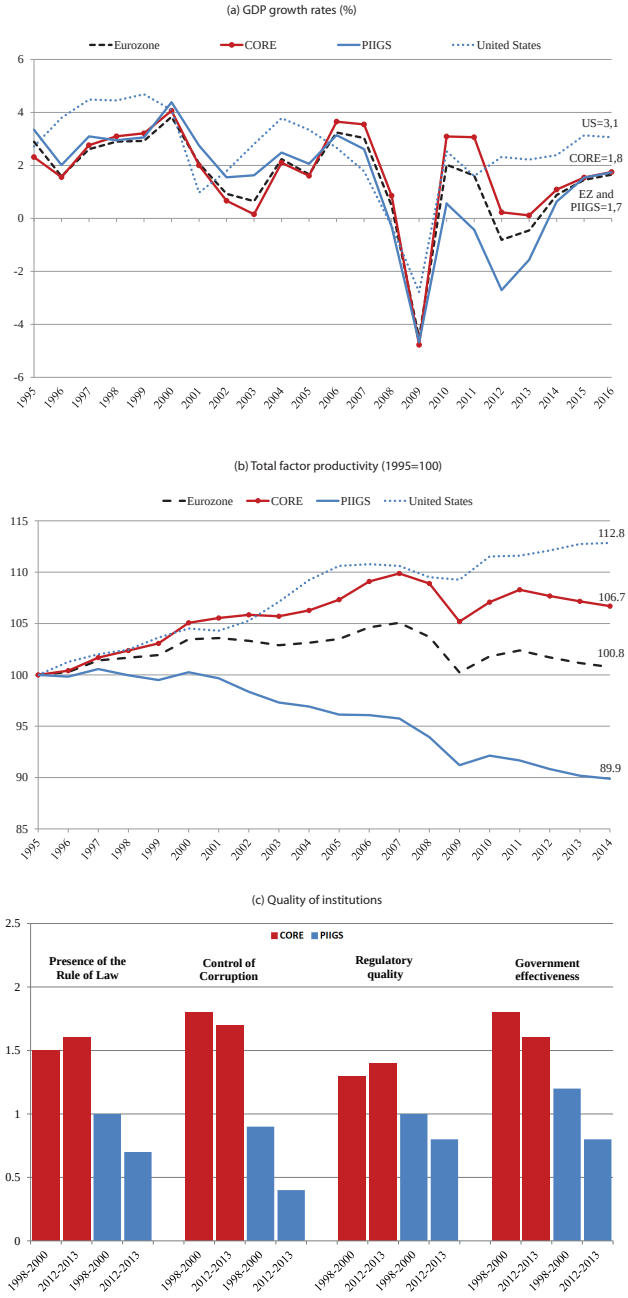
11 Moreover, as was mentioned, for the time being the Eurozone banking union does not include a supranational deposit insurance; the resolution fund is not a surrogate since its task does not extend to covering emerging banking losses. Cf. Regulation (EU) 806/2014, Articles 15 and 27.

- The first one is that the productivity performance displays a distinct worsening after the inception of the euro.

As may be seen in Figure 1 (middle quadrant), the Eurozone's total factor productivity (TFP) growth always fell behind that of the US since 1995. However, while in the 1990s this was mainly due to under-performance by the PIIGS, since the early 2000s the core countries have also fallen behind. As to the PIIGS, the start of the euro seems to coincide with a structural break opening the way to a dramatic fall.[12]

12 In its recent study on potential output, IMF (2015a) finds that the fall in TFP has reflected the dramatic fall in investment (and the related delay in the adoption of the new IT technologies), and also in potential employment due to the impact of aging on labor participation rates. Segmented national market for services, notably in network infrastructures and utility services, at the very time the IT revolution was taking hold, may have also contributed to slowing down productivity. Finally, an important role may have been played by the worsening quality of institution since the start of the euro (Figure 1, lower quadrant), which calls the attention once again to the possible adverse effects on the quality of governance of the lax monetary policies in the early years of the common currency.

Figure 1. Growth, TFP, and quality of institutions



Sources: IMF, Conference Board and World Bank.

Notes: Core are Austria, Belgium, Finland, France, Germany, and the Netherlands. For the lower quadrant, our updating and reclassification of chart from Boltho and Carlin (2012).

- The second euro-related reason for dismal growth may be the deflationary impulses generated for the Eurozone by the pronounced real depreciation of the anchor country vis-à-vis not only the PIIGS but all of its partners (Figure 2, upper quadrant).

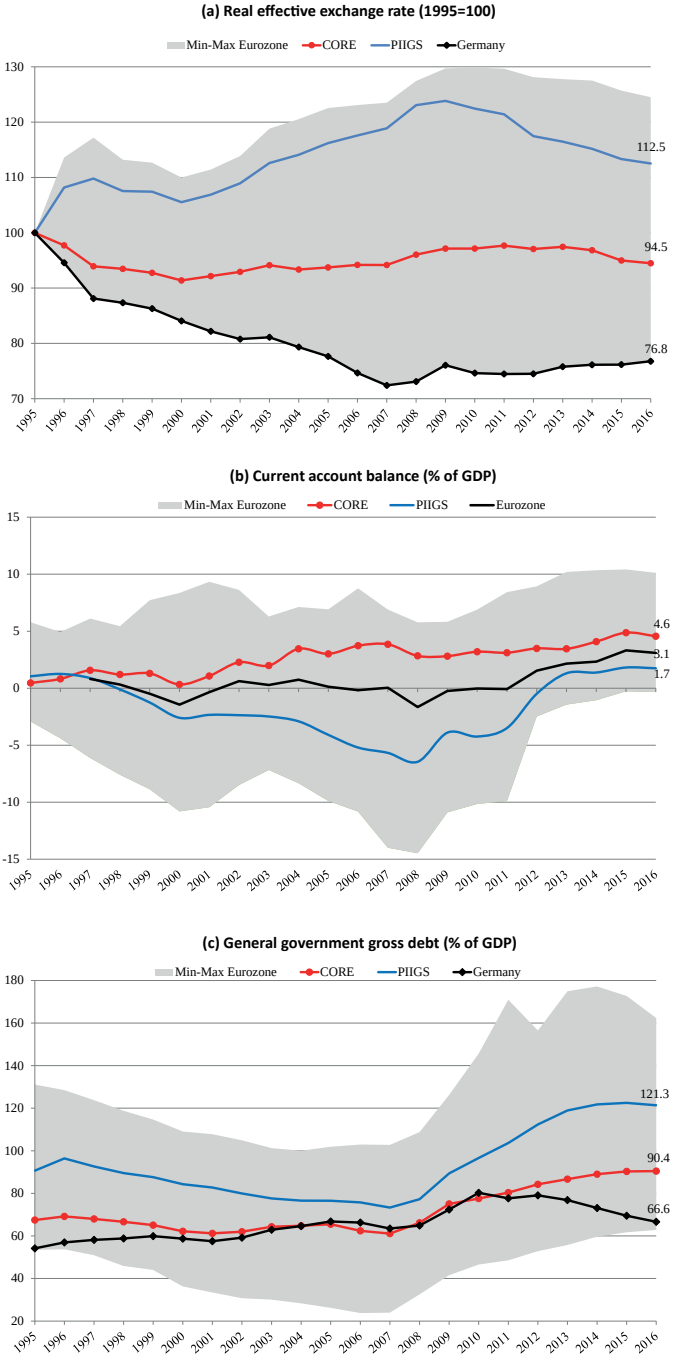
Following the financial crisis, this effect was compounded by *asymmetric adjustment of external payment imbalances* (Figure 2, middle quadrant). Indeed, after the crisis the German current-account surplus has grown bigger rather than smaller, while the external deficit reduction by the peripheral countries was mainly achieved by means of internal deflation.[13] Within-Eurozone real exchange rate developments also drove a shift to manufacturing and exporting sectors in depreciating core economies (Germany above all), and to (less productive) non-tradeables in appreciating peripheral countries.

- The third euro-related reason for dismal productivity performance is the permanent drag on growth and investment generated by ballooning sovereign debts (Figure 2, lower quadrant).

This will require indebted countries to maintain primary budgetary surpluses for many years to come and, in addition, will generate positive interest rate spreads, relative to core countries, on sovereign as well as private borrowing. Under the current growth projections, the debt overhang will recede very slowly and therefore capital market fragmentation will persist, implying that highly indebted countries will remain exposed to *idiosyncratic financial shocks*.

13 It may be recalled that under the Bretton Woods system: (i) the anchor currency country (the US) entered with a large surplus vis-à-vis the rest of the West, which however was largely offset by large flows of direct investment by US companies in the recovering European and Japanese economies; (ii) in the 1950s and 1960s the dollar exchange rate kept on appreciating in real terms (until eventually the system became unsustainable and broke down); (iii) the US domestic markets were open to the exports of other Western countries (see Bordo and Eichengreen 1993). Thanks to the combination of these conditions, the US economy was providing the rest of the world with a continuing expansionary support – exactly the contrary of what the German economy has done to the Eurozone. Only recently, after a decade of moderation, wages in Germany have accelerated significantly, rising for the first time above wage increases in the rest of the area.

Figure 2. Real effective exchange rate*, current-account balance, and public debt



Source: IMF and Ameco. *Germany excluded from Core. REER are based on unit labour costs, relative to EU-15.

The prevailing climate of mistrust between debtor and creditor countries has so far prevented serious consideration of proposals to address the issue through novel *risk sharing* arrangements (e.g. Delpla and von Weizsäcker 2010, German Council of Economic Experts 2011); or with more radical schemes for *debt restructuring* accompanied by changes in governance designed to restore the credibility of the no-bail-out clause for sovereigns (Corsetti et al. 2015).

With his Jackson Hole speech in August 2014, president Draghi broke new ground in Eurozone policymaking by openly advocating *expansionary monetary and fiscal policies* to raise growth. Soon after, the ECB turned to aggressive monetary expansion also including 'unconventional' policy measures (Micossi 2015). The European Commission has heeded the call by launching a new plan for stimulating private investment through the EIB (European Commission 2014a) and by relaxing somewhat the Stability and Growth Pact (European Commission 2015). The success of these initiatives, however, is predicated on policy changes at national level – including market opening measures in network utility services and supportive fiscal changes in countries with more fiscal space – that are not yet in sight. Unfortunately, unless growth can be lifted substantially, the Eurozone will remain a fragile construction with uncertain future.

The way forward

As has been described, the sovereign debt and banking crises of 2010-12 have led to significant changes in the institutions of the Eurozone. However, the credibility of common policies regarding budgetary discipline and economic convergence remains weak, due to the paramount role played in the process by intergovernmental decision-making (Fabbrini 2015). Risk sharing arrangements are inadequate to eliminate the risk of renewed massive idiosyncratic financial shocks. Should it happen again, the exit of one or more of its members could become unavoidable. And there is no agreement between the member states on the actions required to tackle the causes of lacklustre

growth – itself a cause of the fragility of the construction – which as a consequence have fallen disproportionately on the shoulders of the ECB.

At the very core of disagreements between the core and the (southern) periphery stands the question of the appropriate trade-off between 'responsibility' to keep moral hazard under check and 'solidarity' to lighten the burden of adjustment and convergence in highly indebted countries. The Five Presidents report (Juncker et al. 2015) has proposed to put the house in order first, notably with further transfer of sovereignty to common institutions and formalised arrangements to guarantee economic convergence (following Sapir and Wolff 2015). Further institutional advancements would then be possible with complete banking union (including supranational deposit insurance and a surrogate fiscal back up in the form of a credit line from the ESM) and eventually fiscal union (including a Eurozone budget).

In principle, stronger credibility of common polices and national policy commitments can be achieved either by complete decentralisation of decisions to the national level and rigid enforcement of the no-bail out Treaty clause; or centralisation at the EU level of key budgetary and economic policy decisions, with substantial transfers of sovereignty (Pisani-Ferry 2015). The former solution would never be credible owing, among other things, to the sheer size of sovereign debts of some members; and there is little appetite for the latter.

Thus, the likely scenario is that of a continuation of current arrangements, perhaps strengthened by further legal arrangements to underpin national policy commitments and, possibly, direct intervention powers by a new executive figure (the European finance minister) in case of deviations from national policy commitments. However, the complexity of the new economic governance does not help national ownership of common policies at a time of mounting euro-scepticism.[14]

14 The calls for stronger institutions recently coming from French and German quarters are only superficially pushing in the same direction. In France the main goal seems to be that of setting up a common budget able to implement a common aggregate fiscal policy; in Germany it is rather to create some kind of centralised enforcement powers when countries deviate from their policy commitments (e.g. cf. the latest Report of the German Council of Economic Experts 2015).

There is also an unresolved question of democratic legitimacy, owing to the transfer to the European level of executive powers in budgetary and economic policies, which has weakened the scrutiny of these decisions by national parliaments, without a corresponding increase in the oversight powers of the European Parliament (Micossi 2013a).

The way forward here is to gradually bring common economic policies under the oversight of the European Parliament (European Parliament 2015), and to strengthen the role of the Commission in the formulation and execution of policies. However, politicisation of the Commission, following the 'spitzencandidat' procedure for the selection of the Commission president, is now seen in core countries as an obstacle to a greater role by the Commission.

The picture must be completed with appropriate arrangements to get national parliaments more involved in the European policy process, mainly through better exchange of information with the European Parliament and open discussion in national parliaments of country-specific recommendations. In sum, here too we are likely to see more evolution and slow adaptation rather than revolution.

As a final remark, one may recall the results of an in-depth analysis of the evolution of public sentiments (from Eurobarometer surveys) vis-à-vis the European construction by Guiso et al. (2015). They find that Europeans are unhappy about the direction taken by the Eurozone (and the Union), but still consider it as a useful institution to deal with crises. They still believe in the common currency but show no appetite to move forward with further transfer of powers to the European level. They do not want to go backward either, for dislike of their national political classes as well as fear of the costs of an unravelling of the euro. These findings were fully confirmed by recent events in the Greek crisis.

Thus, the present state of the Eurozone could be seen as a sort of political equilibrium, albeit uncomfortable and unstable. The problem, of course, is that it is likely to prove economically unsustainable.

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Structural reforms and monetary policy revisited[1]

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"In the midst of this turmoil, we cannot stop to make reflections; but Renzo, causing disturbance at night in another person's house, and holding the master of it besieged in an inner room, has all the appearance of an oppressor; when in fact he was the oppressed. Don Abbondio, assaulted in his own house, while he was tranquilly attending to his affairs, appeared the victim; when, in fact, it was he who had inflicted the injury. Thus goes the world, or rather, thus it went in the seventeenth century"

– Alessandro Manzoni, The Betrothed.

In a volume devoted to the assessment of the roots and causes of the European crisis, it may come as a surprise to find a contribution focused on the interaction between structural reforms and monetary accommodation. That is what this essay will do – concentrate on the policy recipes prescribed on both supply-side and demand-side to jump-start economic recovery and reduce the extent and spillovers of the crisis itself. But, in the complex and murky reality of the European crisis, what typically would have been part of the solution has been highlighted as part of the problem by a large and vocal group of critics.

1 A preliminary version of these notes were presented at the CompNet conference 'Enhancing competitiveness and fostering sustainable growth: methodological issues and empirical results', European Central Bank, Frankfurt am Main, 25 - 26 June 2015. I thank Filippo di Mauro, Jamie McAndrews, Jonathan McCarthy and Athanasios Orphanides for helpful comments and suggestions. The views expressed here are those of the author and not necessarily those of the Federal Reserve Bank of New York or the Federal Reserve System.

The above citation - probably quite familiar to many Italian high-school students - nicely conveys a similar sense of confusion and disorientation, whereas the distinction between oppressors and victims, diseases and treatments, problems and solutions gets blurred and uneasy. Beyond the audience of Manzoni acolytes, for a lower-brow reference one may want to think of the Eurozone as 'Bizarro world' – an alternate place where fast is slow, good is bad, and structural reforms and monetary policy (the super-heroes under 'normal' circumstances) reappear under disfigured and distorted semblances as the villains of the situation.[2]

Competing views, polar extremes

To be fair, not many observers are willing to take the extreme view that economic policy tout-court is at the root of the European crisis and both supply-side and demand-side policies are jointly co-culprits. Most critics seem happy to highlight that reforms and monetary policy are not on the same level, praising one side of the coin for its contribution to improving macroeconomic conditions and blaming the other side for its unnecessarily contractionary or not sufficiently growth-oriented effects. Problem is, there is no universal agreement on which one of the two is actually the good side.

- One extreme view is that structural reform, considered as the progressive elimination of distortions and frictions in labour, product and financial markets, is all that matters.

Eliminate microeconomic attrition and institutional inefficiencies, the argument goes, and markets will do their magic, in terms of restoring firms to their lost competitiveness.

Of course it is easy to think of monetary accommodation according to this view as unnecessary and ineffective, perhaps as an additional source of randomness and volatility. But things get worse – monetary policy is deemed to be counterproductive

2 The Bizarro world appears in *Action Comics* (1960) as a cube-shaped planet called Htrae (Earth spelled backwards). One wonders to what extent Bizarro used the duplication ray on fiscal policy in the Enozorue.

even when it is effective and predictable. It is counterproductive because it is effective and predictable.

In fact, reforms tend to be undertaken only when governments are under general pressure and can afford to overlook specific lobbying efforts by special interest groups.

If monetary policy effectively provides some macroeconomic breathing space that reduces this urgency, it then jeopardizes the social cohesion and electoral consensus required to push forward unpopular reforms. Also, an injection of liquidity that lowers the cost of money is bound to keep alive unprofitable firms that would otherwise be restructured or disappear, thus preventing the survival of the fittest, upholding a sectoral composition skewed toward low average productivity, and condemning the economy to a limbo of inefficient stagnation.

The bottom line, according to this view, is that monetary stimulus is paradoxically criticized not because it is ineffective or inconsistent, but because it ends up delaying and destroying the very incentives for market adjustment.

- A second extreme view is to some extent the polar opposite of the first. Societies are predominantly present-oriented and discount the future heavily.

In an environment in which in the long run we are all dead and we want it fast and we want it now, structural efficiency is bound to be just an abstract tendency – an ideal for the very long term whose policy relevance is always subordinated to the more immediate search for cyclical stabilisation.

Yes, it is understood that reforms may end up enhancing potential growth and reduce labour market frictions tomorrow, but it is output and employment today that matter. Which means, reform is given a narrow time span to flaunt its promised benefits. As soon as the cyclical costs of structural adjustment become obvious, reform ceases to be a key element of a growth-oriented strategy and metamorphoses into hideous austerity. And when adjustment is perceived (correctly or not) as imposed from outside as part of a conditionality programme of doubtful coherence and effectiveness, rather than an

internal decision undertaken by a democratic society with full control of its own destiny, popular support vanishes and political fatigue ensues, leaving short-term stimulus – if and when available - as the only game in town to restore full employment and provide insurance against the tail risks of deflation.

Less extreme views

Less extreme views of course tend to mix and match elements of these polar approaches. They end up recognising the relevance of both supply-side reforms that promote high and sustainable growth trends, and countercyclical policies that smooth consumption, incomes and employment around these trends.

As the 2015 Sintra speech by Mario Draghi - quite obviously an excellent starting point for any conversation on the interdependence between reforms and monetary policy – makes clear, the not so hard truth is that both structural reforms and monetary accommodation are imperfect, costly, and uncertain tools of growth-oriented policy (Draghi 2015). Firms and households in the European periphery have long shunned an excessively naïve reliance on the confidence-boosting effects of expected gains from structural adjustment, but are the first in line to emphasise that muddling through with patches and patches of short-term stimulus is not exactly a panacea for sustainable performance over time.

A common ingredient of all 'intermediate' approaches is the idea that the natural real interest rate in (parts of) Europe is persistently lower than in earlier decades. The natural rate is associated by definition with the equilibrium between saving and investment at full employment. A vast literature discusses in detail the potential drivers of a lower natural rate in Europe, whether related to demographic factors, globalisation trends, deleveraging, reduced risk appetite, diminished expectations about income growth and employment prospects, higher investments costs of investment, or quite simply catatonic animal spirits. As Draghi mentions in his Sintra speech, a lower natural real interest rate means that, faced with a negative output gap, nominal policy rates need to

go lower still to steer output back to potential. This materially increases the likelihood that central bank policy runs into the constraint set by the zero (or effective) lower bound. It therefore also increases the likelihood that the central bank has to resort to unconventional policies of unknown or doubtful efficacy to meet its mandate.

Two stories as to how intermediate solutions work

There are probably two different but related ways to articulate an 'intermediate' view. In both cases, there are substantial long-term benefits from structural reform. But whether expected long-term benefits translate into short-term gains depends on the extent to which monetary policy can operate effectively.

- Story 1 – as highlighted in recent research work on the subject (see Cacciatore et al. 2013 and Eggertsson et al. 2014) structural reforms that reduce the income and competitiveness gap between core and periphery may well be contractionary during crisis episodes that push the nominal interest rate to its zero lower bound.

In normal times, reforms reduce prices in labour and product markets, increasing agents' permanent real income and stimulating consumption. With falling aggregate prices, the central bank is able to lower nominal interest rate and the economy exhibits a cyclical expansion as well as a sustainable higher rate of long-term growth (see Bayoumi et al. 2004).

Things are different, however, in crisis times when the central bank's nominal interest rate is at the zero lower bound. In this case reforms are contractionary, as expectations of prolonged deflation increase the real interest rate well above its natural rate and depress consumption. In the literature, the short-run output losses associated with the ZLB constraint are increasing with the magnitude of the reforms and become particularly large when reform efforts are half-hearted. When you are stuck in the zero lower band quicksand, energetic 'structural' efforts to get out of the doldrums often make things worse, and provide no guarantee to getting out alive.

- Story 2 – take the previous story, but now replace the intertemporal dimension with a geographic one.

Think of structural reform as being implemented in one specific region but not in the whole of the Eurozone.

As the region has no control on its monetary policy and cannot rely on exchange rate adjustment, no expenditure switching effects arise to redirect system-wide aggregate demand toward the goods and services produced in the region. Lack of exchange rate flexibility plays at the intratemporal level the same role that the zero lower bound plays at the intertemporal level. It is a constraint on the ability of monetary policy to offset the deflationary effects of structural reform.

A narrative of the Eurozone crisis

It is straightforward to combine the two stories above into a narrative of the European crisis, to understand how the hero becomes the villain. At the onset, there is a series of shocks to the natural rate of the periphery countries. To offset these effects and raise the natural rate, structural reforms would be welcome as harbingers of higher productivity growth. But monetary policy is at the zero lower bound, so there is no intertemporal escape. And the periphery is part of a currency union, so there is no intratemporal expenditure switch through exchange rate depreciation. So structural reform makes things worse, and insisting on structural reform as the only way out of the crisis contributes to a vicious circle of disinflation, low demand and low activity, low expected demand and further disinflation.

Ways forward

This is not terribly comforting. Is it actually possible to engineer a strategy to escape such vicious circle, besides sheer luck? Maybe, provided one is willing to reconsider the case for structural reform and think outside the ‘competitiveness’ box.

When policymakers stress the competitiveness gains of structural adjustment, implicitly or explicitly they consider reforms as a reduction in the degree of monopoly power in the product or labour markets, and therefore a reduction in markups – the same result that one would obtain by increasing the elasticity of substitution between varieties produced under conditions of monopolistic competition.

In fairness, this is precisely how reforms are modelled in standard dynamic stochastic general equilibrium models such as, say, Bayoumi et al. (2004) or Eggertsson et al. (2014). The expected effect is an expansion in economic activity and an increase in the amount of resources available for consumption by domestic and international households. Or, as you like it, more competitive firms dump their excess output in their export markets at lower international prices. The external and internal terms of trade are bound to deteriorate, as either the relative price of imports or the relative price of leisure or both increase.

A similar scenario arises in the context of what international macroeconomists would refer to as a variant of the transfer problem (Corsetti et al. 2013a, 2013b). The so-called transfer problem has a long intellectual history which goes back to Keynes' classic criticism of German international obligations after World War I. He stressed that the macroeconomic costs of war reparations – the 'primary burden' of a transfer - were magnified by deteriorating terms of trade – the 'secondary burden' or 'double punishment'.

Arguably, the transfer problem is the intellectual matrix of any meaningful analysis of current account rebalancing, or adjustment between a debtor country and its creditors. The basic mechanism of adjustment requires transfer of real resources from debtor countries such as the US or the European periphery to surplus countries such as China or Germany, with a decrease in domestic spending relative to production in the debtor countries. To the extent that adjustment requires a significant reversal in cost-competitiveness among trading partners, one can immediately recognise the links with the analysis of structural reforms.

The key question concerns the role played by relative prices in the adjustment process. Building on Keynes' approach to the transfer problem, one is tempted to acknowledge that large real depreciations in debtor country are needed to close current account imbalances, either through currency fluctuations or through significant 'internal' real devaluations. So substantial currency flexibility (or alternatively, wage flexibility and deflation) is seen as a precondition for adjustment.

However, over the time horizon relevant for adjustment, the baskets of tradable and non-tradable goods in consumption and production are bound to change and there is substantial entry and exit of firms across sectors and countries. New product varieties are created or destroyed as a consequence of shifts in world aggregate demand. Now, if a large fraction of adjustment occurs through changes in quantities at the extensive margin, the trade gap is closed by producing and exporting new tradable goods to the rest of the world. International prices of new varieties need not fall, and a large real exchange depreciation is neither a sufficient nor a necessary condition for resolving global and regional imbalances.

There is an intriguing application to intra-European imbalances. The conventional therapy for the structural ills of the countries in the European periphery prescribes real depreciations - possibly fostered by policies and reforms accelerating large-scale wage and price disinflations - with the goal of regaining cost competitiveness and closing trade gaps. If the reforms-cum-internal-devaluation plan does not work, then one can bring this view to its extreme consequences and claim that, for crisis countries there may be no alternative to abandoning the Eurozone, and adjusting relative prices via large nominal depreciations.

In contrast, a slightly refocused (and unconventional?) approach would suggest that to foster European adjustment, policy and reforms should target obstacles to firms' entry, start-up costs, and the incentives for product differentiation, not to achieve a narrow objective of cost-competitiveness but to expand the net array of tradable varieties of goods and services. Of course, this story does not deny that some real depreciation

(internal or external) may be needed to facilitate the adjustment process. But the main message is that structural reforms focusing on market liberalisation and reduction of inefficient barriers to entry may not require deflationary pressures – and the associated contractionary effects - as dramatic as some observers claim is unavoidable.

If this unconventional view is correct or appropriate, then the link between structural reforms and monetary policy may be consistently reassessed. Setting up firms and new production lines is costly and typically requires financial resources. Structural reform cannot succeed without appropriate policies that address tight credit constraints on investment and firms' activity due to liquidity and balance sheet problems hitting banks. We no longer have a dichotomy between costly reforms and anti-recessionary monetary policy, but rather an integrated and perhaps coordinated vision of 'whatever it takes' to restore growth.

Needless to say, there is no easy and straightforward strategy. How to guarantee that entrepreneurship is rewarded and the appropriate resources flow to the right sectors? How to provide incentives to achieve the desired allocative efficiency without falling in the trap of directed credit? Who assesses (and according to what metrics) which sectors will flourish and which sectors will decline? There are no obvious answers, but this need not imply that there are no answers. The alternative option, i.e. continuing reliance on deflationary adjustment in a currency union stuck at the zero lower bound, is probably unlikely to convince anyone that structural reforms and monetary policy are back to being part of the solution and no longer being part of the problem. Thus goes the world, or rather, thus it goes in the twenty-first century.

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Eurozone Original Sin? Nominal rather than institutional convergence

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The focus of European policymaking in the 1990s was on meeting a set of nominal criteria. This chapter argues that instead the focus should be on institutional reform and convergence. The main issues that need to be addressed are related to state capacity (tax collection), property rights protection, investor rights, red tape, and administrative-bureaucratic quality. If Europe is to proceed with an even closer union, it should set up institutional rather than nominal targets.

There is an inherent disconnect between modern economic reasoning on growth on one hand, and the convergence criteria set up by the Maastricht Treaty and the Stability and Growth Pact that set the foundations for the euro on the other hand.

The focus of economic policymaking across EU member countries during the transition period in the 1990s was on meeting a set of nominal criteria, low inflation, exchange rate stability, moderate public debt levels, and sound fiscal policies.

While there is nothing inherently wrong in having solid macro-economic performance, the problem with these goals is that they are outcomes, endogenous macro aggregates stemming from deep structural economic, political, and societal features.

Countries in Europe did not have different debt levels, budget positions, and inflation rates by luck, but because EU countries have developed different sets of political and contractual (legal) institutions. Differences in outcomes arose because EZ members

regulate their product and labour markets differently and because the Eurozone nations differ greatly on the capacity to perform their core duties, enforce contracts, and collect taxes.

The generic problem with the design of the European monetary unification project was its focus on nominal targets and outcomes rather than on addressing the deeper underlying institutional features shaping economic policymaking, the structure and competitiveness of the economy, and economic efficiency. The focus was on symptoms rather than the causes.

Some theory: Transition and convergence

Since the path-breaking work of Bob Solow and Trevor Swan in the 1950s, macroeconomists have decomposed development and growth into a transitory component, stemming from the accumulation of the production factors (i.e., skilled and unskilled labour, infrastructure, ICT capital) and a more permanent stable component, that reflects the efficiency of a country to produce for a given level of skilled and unskilled labour and capital.

The key insight of neo-classical theories of growth is that countries can experience growth even in the absence of improvements in the efficiency of production (total-factor-productivity), as long as they implement some basic policies that spur investment (capital accumulation). Catch-up growth is feasible and profitable when capital is relatively scarce, since in this case the return on investment is high. Yet, once the economy accumulates (physical and human) capital, the return on investment falls and the economy reaches a (so-called) steady state (balanced growth path) where growth is driven solely by technical progress, i.e. improvements in production efficiency (total-factor-productivity).

As countries develop, they need to shift their growth paradigm from capital investment towards technological innovation, research and development, entrepreneurship in

skill-intensive sectors, and high value-added activities. Moreover, countries need to differentiate their goods, perhaps upgrade their quality of production in order to gain global market shares and exploit some monopoly profits.

This framework is quite useful in understanding the fast growth in the European periphery in the 1990s and early 2000s (and in earlier decades). Greece, Portugal, Spain, Ireland and to a lesser extent Italy experienced fast growth during the 1990s as monetary stability (pegging local currencies to the ECU) and the associated drop in inflation unleased the power of capital accumulation and led to an increase in investment.[1]

This process was bolstered by some reform in financial intermediation, banking in particular.[2] During the 1990s these countries also gained some competitiveness thanks to privatisation of inefficient state enterprises and some limited reforms on product markets (that were initiated by the Single Market Plan in the 1980s). However, improvements in the efficiency of production were limited and many firms in the south found it hard to compete internationally. The increased global competition (stemming from the lowering of tariffs and other non-tariff-barriers, the rise of Chinese and Asian imports) made it very hard for the small, family-run, mismanaged, and focused on domestic markets firms in Greece, Portugal, Spain, and Italy to compete. So, the drop in interest rates and the stability of the single currency did not translate into an increased productivity in the south. Instead, these features contributed to the construction boom and the relocation of labour from agriculture and inefficient manufacturing into construction (see Garicano et al. 2013).

1 Most of domestic and foreign investment concentrated in financial services, construction and some other inward-oriented sectors. This sector-specific over-investment did contribute to the crisis. Yet for simplicity, here we do not discuss the sector-specific implications of EMU and the crisis.

2 The key liberalising policies were the incorporation (transposition) into the domestic legal order the first and the second banking directive. Since the late 1990s, legal-regulatory harmonisation policies in financial services was bolstered by the directives and regulations of the Financial Services Action Plan that aimed to integrate financial intermediation across the EU. Kalmeli-Ozcan et al. (2010) estimate that 25%-30% of euro's large impact on cross-border banking activities is attributable to such financial-banking sector harmonization policies.

The leadership of the EU realised that catch-up growth had reached its limit and that EU countries had to switch their growth model. The introduction of the euro was accompanied by the ambitious Lisbon Agenda in 2000 that aimed to make in just ten years the EU "the most competitive and dynamic knowledge-based economy in the world capable of sustainable economic growth with more and better jobs and greater social cohesion". Yet, the Lisbon agenda has been a failure, as very little was done on structural reforms and human capital investments that are sine qua non requirements for modern growth.

Steady-state factors. Institutions, red tape, and state capacity

So which features affect total-factor-productivity, the efficiency of production? In which areas shall the EU and the Eurozone focus on, so as to bring much-needed growth and prosperity?

- A burgeoning body of research on growth and political economy provides compelling evidence that the focus should be on institutional reform.[3]

Europe seems to be in need of an institutional convergence, as institutions, the rules of the game – in Douglass North's terminology – differ widely across Europe and, crucially, affect economic efficiency.

To be fair, there is still a lot of debate on exactly which institutional traits matter the most and whether other-than-formal institutional features (related, for example, to trust, beliefs, and civic-social capital) matter as well. A voluminous body of empirical research nevertheless shows quite convincingly that institutions exert a first-order impact on development and are especially crucial for advanced economies that have exploited the gains of catch-up growth (convergence).

3 See Acemoglu, Johnson, and Robinson (2005) for a review and Acemoglu and Robinson (2012) for a general exposition of the institutional thesis).

In particular, research and common wisdom suggest that the focus should be (or should have been) on:

Investor protection, shareholders, and creditors' rights, which are crucial for the development of efficient, deep, and liquid capital markets (La Porta et al. 1997, 1998).

Moreover, legal institutions are associated with a higher volume of bank credit and lower interest rates to the private sector, a higher degree of entrepreneurship and innovation – factors that contribute to total-factor-productivity (see Levine 2005, and Papaioannou 2008 for reviews on the link between finance and growth).

Shareholders and creditors' rights differ widely across the EU. In Italy and Greece, investor protection against tunnelling, looting, and managerial entrenchment is very weak, while the Scandinavian countries, Germany and the Netherlands offer shareholders and creditors a secure legal framework for investment. For example, in 2008, on the composite 1-10 range index of shareholder protection (produced by World Bank's Doing Business Project) Greece scored 3.0, ranking 158-165 out of 181 countries. For comparison, the world average was 4.87 and the Eurozone average, excluding Greece, was almost 6 (see Papaioannou and Karatza 2015).

- Court efficiency and the quality of contract enforcement affect economic performance and total-factor-productivity in particular (Djankov et al. 2003).

An efficient judiciary is needed to attract foreign investment, especially in complex R&D intensive sectors. Differences on the time to resolve even simple disputes differ enormously across Eurozone member countries (see Papaioannou and Karatza 2015 for details). The World Bank estimates that the time needed to resolve via the court system a standard dispute regarding a commercial claim that equals 200% of per capita GDP is 820 days in Greece and 1000 days in Italy! This is more than twice the time needed in other EU countries (400-500 days), and is even more than the average in low-income countries (682 days).

- Formalistic product market regulations and associated red tape constitute a signifi-

cant impediment to firm creation, innovation, and entrepreneurship in many countries in Europe.

For example, the countries in the periphery, such as in Greece and Italy, place numerous administrative-bureaucratic barriers to firm entry and expansion. Red tape fuels corruption, which in turn lowers trust towards the entrepreneur and business, which in turn breeds more regulation (Aghion et al. 2010). Moreover, red tape and start-up barriers are particularly harmful for the process of creative destruction and the relocation of labour and capital from globally declining sectors to industries with growth potential (Ciccone and Papaioannou 2006).

- State capacity on enforcing contracts and tax collection has also been linked to development and prosperity (Besley and Persson 2010).

There are significant differences across Eurozone countries on both aspects of state capacity. Tax evasion is rampant in Greece and also widespread in Italy and other parts of the south, where the size of the shadow and unofficial economy are considerable. An innovative recent study (Artavanis et al. 2015) that compares tax filings with bank loans estimates that the unreported income in Greece in 2008-2009 was at least €28 billion, and the foregone government revenues amount to 32% of the record deficit for 2009 (that exceeded 15% of GDP).

Summary

Somewhat paradoxically, the criteria for joining the euro did not touch upon key institutional issues related to state capacity (tax collection), property rights protection, investor rights, red tape, and administrative-bureaucratic quality. The high growth during the convergence period came mostly from increased investment and some limited reforms, mostly on banking and monetary policy stability. Yet, if Europe is to proceed with an even closer union, more is needed so as to bring the quite heterogeneous

economies of the 19 member states closer. This entails deep and multi-dimensional structural reform and setting up institutional – rather than nominal targets.

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The main lessons to be drawn from the European financial crisis

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What are the main lessons to be drawn from the European financial crisis? This column argues that the Eurozone really is at a major cross-roads. Without a common fiscal policy, and without adequate institutions for aggregate demand management, European leaders have to constantly alter the rules. Currency risk will be the major concern of financial markets, much more than in the past, due to how Europe has dealt with the Greek crisis.

What are the main lessons to be drawn from the European financial crisis? Any debate on how to make the Eurozone more resilient ought to start with this question.

Two things stand out:

1. There is a trilemma – emphasised by Obstfeld (2013) amongst others – that, namely, given the size of global finance, the Eurozone cannot have full financial integration, financial stability and no common fiscal policy;
2. The Eurozone does not have adequate institutions and tools for aggregate demand management.

A trilemma?

Financial integration exposes the weaker member states to the risk of sudden stops, namely of sudden withdrawal of international financial flows. This risk can be

diminished by surveillance and avoiding the accumulation of excessive imbalances. But it will never disappear, particularly in the event of systemic financial crisis.

If a sudden stop occurs, the sovereign most likely will lack the fiscal resources to cope with it. The size of the financial sector has grown just too large. At the end of 2007, bank assets were several multiples of GDP in most Eurozone countries (over five times in the Netherlands, about four in Italy, about three and a half in France). Unlike a typical emerging country hit by a sudden stop, Eurozone members cannot devalue their currencies to cope with the crisis. Yet, as became crystal clear in Greece – but also in other countries of southern Europe – currency risk is a major concern for market participants.

During a sudden stop, the bank-sovereign loop that we have seen at work during the crisis becomes inevitable. The home bias of bank portfolios aggravates the loop. But in the presence of currency risk, even a bank with well-diversified assets would not be able to withstand the flight to safety of its depositors. And the sovereign would typically not be in a position to help, given that it can neither devalue nor print money.

On the contrary, in countries with high public debt the sovereign itself could be the primary source of fragility, and its exposure to debt runs could activate the bank-sovereign loop. Any country with a large public debt, and with no access to monetary financing, could be subject to a run on its debt, even if it was solvent in the long run. In other words, liquidity crises triggered by lack of confidence could push into insolvency not only banks, but also sovereigns with high public debts and no access to the printing press.

- This trilemma implies that, in order to preserve financial integration and avoid future crisis, we need adequate common fiscal resources to cope with both systemic banking crisis and sovereign debt runs.

The European Stability Mechanism and the Single Supervisory Mechanism are steps in the right direction, but they are not enough. A full banking union will not be achieved

until we have a system of common deposit insurance and adequate common resources for bank resolution and recapitalisation. And the European Stability Mechanism cannot cope with a sovereign debt run, because its resources are insufficient and its decision-making procedure too constrained by national vetoes.

The need to accelerate the completion of the banking union is widely acknowledged in the official debates. A significant fraction of the latest Four Presidents' report is devoted to this issue (although the envisaged time frame is still too long).

The question of how to make the Eurozone resilient to the risk of sovereign debt runs is not on the table. On the contrary, to make quantitative easing acceptable, the ECB had to rule out loss sharing between national central banks on purchases of government debt. As confirmed by the Greek crisis, restructuring of public debt held by official creditors is impossible inside the Eurozone, implying that sovereign debt risk and currency risk are intertwined. In this, the Eurozone resembles a currency board with a special voting rule, rather than a full monetary union (see Buiter 2015).

The reason why the trilemma is so hard to solve is clear. The initial asymmetries in public debt and financial fragilities between countries are so large that some nations fear that public risk sharing would amount to ex-ante redistribution. But this reasoning is wrong.

First, banking and debt crisis often result from lack of confidence (multiple equilibria). If so, guarantees (like common deposit insurance, or the existence of a lender of last resort) are sufficient to prevent illiquidity from morphing into insolvency. In this case, no transfer between countries is required to get rid of the bad equilibria, and everyone is better off.

Second, suppose that the financial crisis is triggered by insolvency, not just by illiquidity. Here transfers between countries would be required. But in principle, risk sharing is feasible also between very different partners. To be fair, the terms of the ex-ante agreement have to take into account asymmetries in risk.

There is no reason why this principle cannot also be adapted to the problem at hand, for instance by linking the cost of the common deposit insurance, or of other common precautionary funds, to the aggregate financial fragility of each country, so that residents of riskier countries would have to pay a higher 'fee' in normal times.

Aggregate demand mismanagement

The second main lesson is that lack of aggregate demand aggravated and prolonged the financial crisis in southern Europe. When hit by a sudden stop, domestic fiscal policy has no option but to become more restrictive, and a credit squeeze cannot be avoided as domestic banks are forced to deleverage. To avoid a deep and prolonged recession, active aggregate demand management at the level of the Eurozone as a whole is required. But this did not happen.

Monetary policy did not respond fast and aggressively enough, and it even tightened prematurely. Eventually the ECB did all the right things, with extensive bank lending and quantitative easing. But these actions came too late in the crisis, when the real economies in Southern Europe had already suffered huge losses. Just imagine how much easier it would have been to handle the sudden stops in southern Europe, if the statement, 'whatever it takes', had come at the beginning of the crisis.

Even if monetary policy had reacted more promptly, however, the zero bound on interest rates imposes limits on what monetary policy alone can achieve. As is now well-understood, coordinated monetary and fiscal expansion is needed in these extreme circumstances (see Giavazzi and Tabellini 2014). Yet the Eurozone has no common fiscal policy, and the countries in northern Europe were and are running large current account surpluses, subtracting additional aggregate demand from the rest of the Eurozone.

This aggregate demand mismanagement was not just the result of human error. It reflects the institutional design of the Eurozone. The lexicographic mandate on price

stability delayed the ECB response. The ECB waited until the Eurozone as a whole was in deflation before reacting adequately. And the lack of institutionalised risk sharing implies that the burden of adjustment to a sudden stop falls exclusively on the debtor countries, with no enforceable obligation by the creditors to expand their fiscal policy in order to sustain aggregate demand in the Eurozone as a whole.

Difficulties in fixing the problems

These institutional features that led to this mismanagement ought to be corrected by changing the mandate of the ECB, by removing the constraints on monetary financing in order to facilitate a coordinated monetary and fiscal expansion, and by endowing the Eurozone with the possibility of issuing and servicing its own debt. But these issues are still taboo in official circles, and the Four Presidents' report does not even mention them.

Why this reluctance to acknowledge that the institutional foundations of the Eurozone impair aggregate demand management during systemic crisis? The answer probably goes beyond asymmetric risk and the fear of redistribution.

There is also the idea that moral hazard is a serious issue, that if countries started from a balanced budget then they could cope with their own resources when hit by idiosyncratic shocks, and that extreme economic pain is needed to induce adjustment in the weaker countries. But this idea has no solid foundation, for both economic and political reasons.

In 2007, Spain was running a budget surplus of over 2% of GDP. Given the extent of current financial integration, a sudden stop cannot be assimilated to an idiosyncratic demand shock that can be met with national fiscal policy alone. Moreover, if average inflation in the Eurozone was 3%, rather than a negative number, relative wage adjustment and the removal of the debt overhang in southern Europe would be much easier. Finally, as vividly illustrated by Greece, extreme economic hardship weakens

the support for pro-Europe political parties, making adjustment less likely, not more likely.

Concluding remarks

The Eurozone is at a cross-roads. Having serious contemplated the exit of Greece from the Eurozone, European leaders altered the rules of the game, even if Grexit did not occur so far. From now on, currency risk will be a major concern of financial markets, much more than in the past. The Eurozone is correctly perceived to resemble a currency board, more than a full monetary union. In these circumstances, economic convergence between the core and the periphery will take a very long time, if it happens at all.

Waiting until convergence has been achieved before addressing the fault lines is too risky. Not just because a new financial crisis could erupt, but also because of the rise of populist anti-euro parties. Ctizens of Europe will turn to these parties, if they see that the political establishment is unable to address the challenges ahead.

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Causes of a continuing crisis: Not dealing with debt

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Inadequately dealing with high public debt is one of the central causes of the continuing crisis. This column argues that, while other failures of the institutional framework have been recognised and partly dealt with, the failure to deal with the legacy excess debt may continue to haunt the Eurozone for decades. Even worse, the failure to complement fiscal rules with an effective sovereign debt restructuring regime may be leading us to repeat the same mistakes.

Greece has done it, again. It has shaken the fundaments of the Eurozone, absorbed all energy and political capital and has come very close to breaking through the 'no exit' sign of the single currency. Although the Greek drama has some very specific twists that are not comparable to other crisis-stricken countries, the bloody six-month standoff leaves many tears in the fabric of the entire Eurozone.

All seemed to be going well at the beginning of 2015:

- The combined power of the ECB's announcements of its bond-purchase programmes (outright monetary transactions and quantitative easing) eliminated breakup fears and reduced interest rates and sovereign spreads to levels last seen before the crisis started;
- The clean-up of the banking system was underway und progress on the establishment of the banking union was visible;

- The size of quantitative easing surprised markets on the upside and so did, eventually, economic growth of the currency area as a whole.

But by February 2015 all spotlights shifted back on Greece and the finance ministers and heads of state were back in full crisis mode – spending countless days and nights in seemingly fruitless negotiations.

Ultimately, the full clash was narrowly averted in July but no side can be happy with the result. The Greek saga has once again highlighted the incompleteness of the currency union and its vulnerability to renewed crisis.

This contribution argues that one of the key causes of the continuing crisis is the failure to adequately deal with debt. This argument is not about Greece – Greece is in a whole different league when it comes to debt problems.

The failures are threefold:

- The failure of market discipline and an ineffective fiscal framework allowed too much accumulation of public and private debt in the first place;
- The failure of the Eurozone to address the debt overhang and legacy debt. Eurozone leaders relied instead almost exclusively on fiscal adjustment. This lead to low growth and it intensified the bank-sovereign loop.
- The lack of a credible sovereign insolvency regime complicates orderly debt restructuring and may contribute to renewed debt accumulation.

Failure 1 – accumulating too much debt

There can hardly be any disagreement on the diagnosis of too much debt accumulation over the course of the first eight years of the existence of the euro. By 2007 total debt (public plus private) had increased to dramatic levels (see Figure 1).

Much of the early increase was due to private debt accumulation in booming Ireland, Portugal and Spain, but it was largely socialized in the crisis. The failure to recognise the dangers of increasing private leverage was certainly not unique to Europe's currency union. But the lack of monetary policy as an adjustment instrument at the national level made the consequences more severe than in other countries like the UK or the US.

Figure 1. Total debt of the Eurozone (% of GDP)

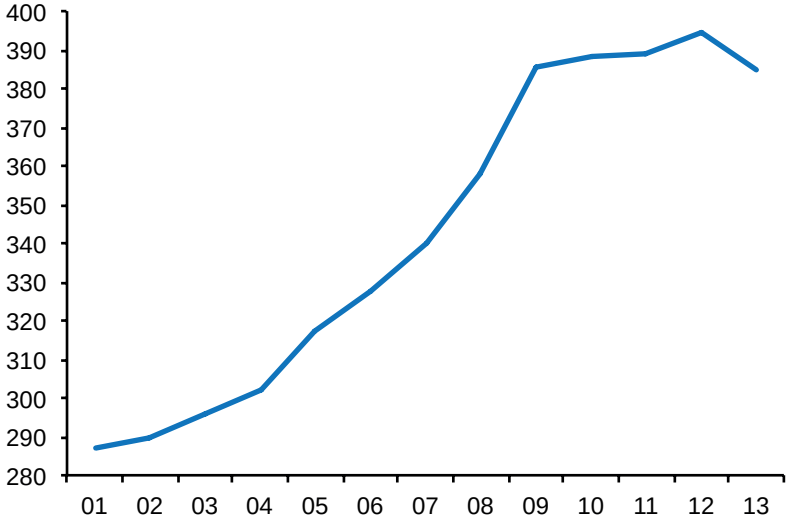
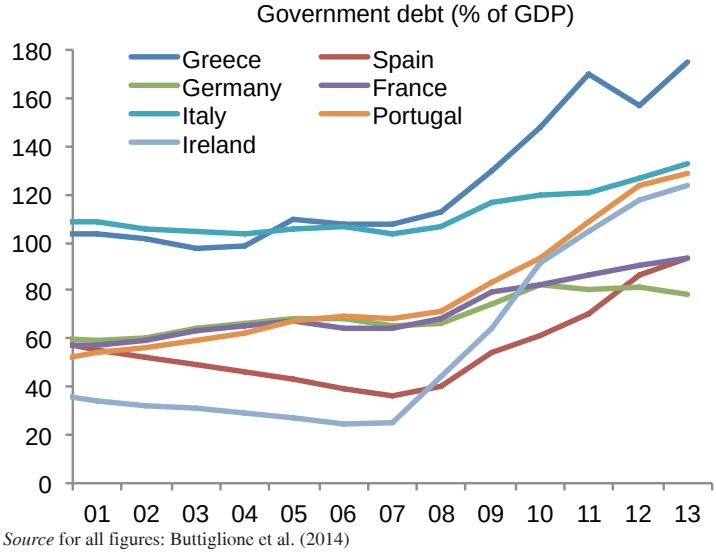


Figure 2. Public debt of selected Eurozone countries.



Source for all figures: Buttiglione et al. (2014)

In the early years of the currency union, markets did not exert any discipline on deficit-spending assuming – correctly – that the no-bail out clause would not bite in crisis. The average spread between the long-term borrowing rates of Greece, Ireland, Italy, Portugal, and Spain versus German long-term rates was only 25 basis points between 1999 and 2007 (see ECB data).

Public debt was quite stable until 2008 (see Figure 2).[1] However, countries that had been allowed to enter the Eurozone despite failing to satisfy the Maastricht criteria on public debt (such as Italy or Greece) did not reduce debt levels and became vulnerable to the change in market sentiment as the crisis erupted. The failure to comply with the deficit rules was well-known even before the crisis. The fiscal framework clearly did not exert a sufficient disciplining effect, moreover, it was further weakened after France and Germany colluded to circumvent the rules in 2003.

The most prominent feature of Figure 2 is the rapid increase in public debt during the crisis due to a combination of increasing deficits and the takeover of private debt onto public balance sheets. By 2014 public debt levels in the Eurozone as a whole stood at 97% of GDP, almost 30 percentage points higher than at the onset of the crisis. Now, the Eurozone had an excess public debt problem.

Failure 2 – no common approach for dealing with excess sovereign debt

So far, there has been little appetite for a common approach to dealing with the legacy sovereign debt, in part due to the view that the accumulation of excess debt was the responsibility of every individual country, and that the resulting problems are largely confined to the country-level. However, this narrow view seems misguided. The dangers of high debt can threaten the entire monetary union through multiple adverse feedback loops and externalities (see Corsetti et al. 2015):

1 Public debt of the Eurozone as a whole even decreased slightly from about 72% of GDP in 1999 to about 67% of GDP in 2007 (WEO 2014).

- First, high public debt exposes a country to risks of a self-fulfilling crisis. If rising risk premia call into question fiscal solvency, banking health and economic activity is likewise stifled. This, in turn, exacerbates fiscal pressures on the government. Moreover, such crises tend to be highly contagious and to spill over other vulnerable countries.
- Second, a high debt service burden poses the risk of chronic low growth. Uncertainty about fiscal adjustment may act like a prohibitive tax on new private investment and labour income. In turn, low growth increases the adjustment burden. Moreover, it has negative spill-overs on trading partners and complicates the conduct of the single monetary policy when it also causes large discrepancies in economic performance across member states.
- Third, a high public debt level imposes large externalities – through direct and indirect systemic effects – on the rest of the monetary union when any attempt is made to restructure debt. Moreover, it creates a problem similar to the 'too-big-to-fail' conundrum of financial institutions. On the one hand, creditors have incentives to gamble for resurrection by financing even in cases of unsustainable debt dynamics, thus imposing an outsized adjustment burden. On the other hand, the debtor government may attempt to hold the rest of the currency union hostage by threatening to default and by resisting reforms.

The above list shows that high public debt should be a concern for the entire Eurozone. There should therefore be a common interest in undertaking fast and concerted actions to reduce Eurozone debt.

The problem of relying on the ECB so heavily is that the Bank may be forced to act as lender of last resort to Eurozone governments – bringing the institution into the grey area between illiquidity and insolvency. Concerns about the risks to the ECB balance sheet may limit the Bank's capacity for intervention as has already become evident in the case of quantitative easing, which is being implemented with minimal risk sharing.

Despite this, there has been no appetite for a common and concerted fiscal approach to reduce public debt. The debt-redemption pact proposal of the German Council of Economic Experts (2011) was rejected because it involved the mutualisation of legacy debt (even the German Council itself is now rejecting the proposal).

Accepting the no-mutualisation red line, Corsetti et al (2005) have proposed an alternative approach for a rapid and concerted debt reduction. The proposal involves an agreement by all Eurozone countries to commit future revenues for the sake of retiring debt. They would bring forward current and future income streams and commit their net present value (NPV) to buy back the national debt now. Capitalising even small current and future income streams over a long horizon generates in net present value terms a large sum of money to buy back the debt. In addition, elements of solidarity and a debt equity swap could make the debt reduction deal viable and equitable.

The aim of the debt reduction deal is to eliminate legacy public debt, bringing debt in countries (expect Greece, which is a special case), below 95% and thus plausibly into the zone of solvency.

The second pillar of the proposal is a regime to deal with cases of unsustainable sovereign debt, which would help prevent countries from becoming too big to fail, again.

Failure 3 – no regime for dealing with sovereign insolvency

Although Greece is extreme in many ways, it has repeatedly highlighted the European failure to establish a regime for dealing with cases of unsustainable debt. After the no-bail out clause failed to prevent excess debt accumulation, the Eurozone had to find a quick fix when Greece lost market access in 2010. The solution was to rely on an IMF programme complemented by bilateral loans from European partners. Even though

the IMF staff could not assure debt sustainability, the IMF Board decided to provide financing to Greece without debt restructuring.[2]

Over the following five years, Greek debt has been restructured several times. By now, the debt relief from the private sector and by the European official sector (prolonging maturities and reducing interest rates) has significantly reduced the net present value of Greek debt to below 100% of GDP (see Schumacher and Weder di Mauro 2015). Nevertheless, due to the gigantic economic cost of the prolonged standoff this year, the IMF now concludes that Greek debt is unsustainable over the medium run without further restructuring.

The heat map, the summary IMF Debt Sustainability Assessment (DSA) tool (see figure 4), now is entirely 'red' – meaning that there is a high risk of debt distress on all dimensions the IMF takes into account. Moreover, the Fund no longer is prepared to invoke the 'systemic exemption' that justified the programme in 2010 because of the diminished contagion effects of a Greek restructuring.

Figure 3. Greek public debt sustainability analysis risk assessment

Debt level 1/	Real GDP growth shock	Primary balance shock	Real interest rate shock	Exchange rate shock	Contingent liability shock
Debt level 2/	Real GDP growth shock	Primary balance shock	Real interest rate shock	Exchange rate shock	Contingent liability shock
Debt level 3/	Market perception	External financing requirements	Change in the share of short-term debt	Public debt held by non-residents	Foreign currency debt

Source: IMF (2015).

For the European creditors this raises the paradox that they are relying on the Fund to provide the framework (and the trigger) for debt restructuring, but are unwilling to grant the debt relief and would rather extend further financing.

2 IMF staff had concluded that Greek debt was sustainable, but not with high probability. Under the exceptional access policy this would have prevented access to Fund resources without a debt restructuring. The quick fix for this breach in lending policies was to amend them (permanently) by introducing the systemic exemption. There were misgivings in the IMF board (see minutes of the board meeting of May 9, 2010 available at http://adlib.imf.org/digital_assets/wwwopac.ashx?command=getcontent&server=webdocs&value=EB/2010/EBM/353745.PDF), but the programme was approved nonetheless.

This is the typical problem of time inconsistency (no bail out is optimal ex ante but not ex post) and the reason why the Eurozone needs to establish a workable regime to deal with sovereign insolvency. Reform proposals for debt restructuring regimes are abundant (see Bucheit et al. 2013) for an overview. The political will to implement them is not. In part this is due to principled concerns that it would weaken the credibility of the sovereign signature, in part this is explained by the fear of making the ongoing crisis worse.

The proposal by Corsetti et al. (2015) addresses the latter fear by combining a restructuring regime with the elimination of legacy debt (the debt reduction deal as sketched above). After legacy debt has been reduced under a common threshold (95% of GDP), ESM lending policies would be amended.

The ESM would condition access in cases of risk of debt distress (defined by the common threshold) on a one-time debt prolongation (reprofiling) or an immediate debt reduction. It is important to note that this debt restructuring regime fulfils the dual goals of, first, making sovereign debt crisis more manageable when they occur, and, second, discouraging renewed debt accumulation.

Conclusion

These three failures to adequately deal with high public debt are central causes of the continuing crisis. While other failures of the institutional framework have been recognised and partly dealt with, the failure to deal with the legacy excess debt may continue to haunt the Eurozone for decades. Even worse, the failure to complement fiscal rules with an effective sovereign restructuring regime may be leading to a repeat of the same mistakes.

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Divergence of liability and control as the source of over-indebtedness and moral hazard in the European Monetary Union

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The Eurozone has exposed severe weaknesses in recent years.. This column presents an analysis of its two prime weaknesses – the lack of economic and fiscal policy discipline leading to the build-up of huge public and private debt levels and a loss of competitiveness, and the lack of credible mechanisms for crisis response that would reign in moral hazard problems and establish market discipline. Completing the currency union's architecture and achieving credibility for its rules are key, given the heterogeneity and rigidity of its member countries' economies.

The European Economic and Monetary Union is intended to promote economic stability, growth and integration of its members. However, in order to reap the economic benefits of more deeply integrated goods and financial markets that promote competition through low transaction costs free from exchange rate risks, member countries had to give up their independent monetary policies. Thereby, they forgo an important economic adjustment mechanism that had repeatedly been relied upon in the decades prior to the introduction of the euro. In the event that a member suffers an economic downturn, it is no longer able to devalue its currency vis-à-vis the other members. This option for gaining external price competitiveness and for reducing the country's debt burden by means of unexpected inflation has been eliminated.

Countries are left with the option of internal devaluation, that is, adjusting wages and prices to restore price competitiveness and debt sustainability. The more rigid goods and factor markets are, the more time internal devaluation takes and the more difficult it becomes to reduce unemployment.

With the loss of monetary policy as a tool for national policymaking, fiscal policy gains in importance. Employing fiscal policy in an effective and sustainable manner requires the unity of liability and control in the respective political decision making. If joint liability for the fiscal policy of individual member countries was accepted without moving control to the European level, the result would be substantial moral hazard. Before the Eurozone debt crisis, this risk was often dismissed as an abstract discussion and therefore ignored by policymakers. However, it has by now become evident how important the moral hazard problem is in practice.

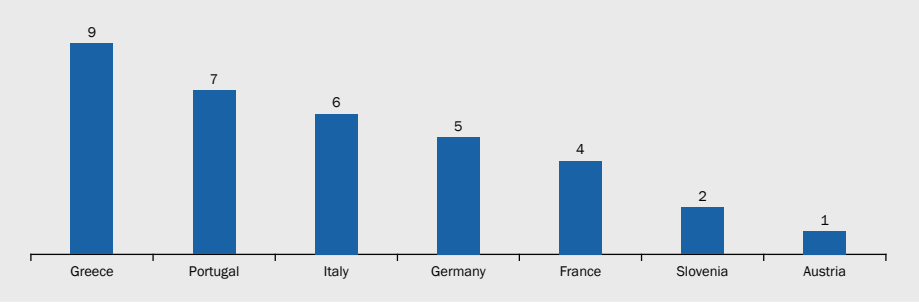
There are two basic options for a common currency area that hold the promise of long-term stability. One is a political union, in which member countries cede sovereignty over their fiscal policies to a supranational body for the entire Eurozone. In return, the union assumes shared liability for collective government debt. Joint liability alone would de-stabilise the monetary union – only an extensive transfer of sovereignty can effectively sustain this model of political union.

The other option is that fiscal sovereignty and liability remain at the national level. Individual member countries then remain responsible for the repayment of their debt. In this case, there must be a credible ban on transferring liability to other member countries, i.e. a no-bailout rule. Otherwise, financial markets will not exercise the disciplining function on national governments' decision making that would result from higher risk premiums on government bonds reflecting markets' perceptions of sovereign risk.

In the Maastricht Treaty, the members of the Eurozone committed themselves to fiscal discipline, and hence to the principle of fiscal sovereignty rather than political union. However, several countries subsequently violated the rules they had agreed upon in the Treaty, in particular the Stability and Growth Pact that had been intended to embed

the no-bailout clause in fiscal policymaking. The sanctioning mechanisms that were agreed upon were barely employed – there were 34 breaches of the 3% threshold for the general government deficit between 1999 and 2007. None of these cases were escalated to the highest level of sanctions (see Figure 1). The breaches of the pact by Germany and France set particularly detrimental precedents.

Figure 1. Breaches of the 3% threshold from 1999 to 2007[1]

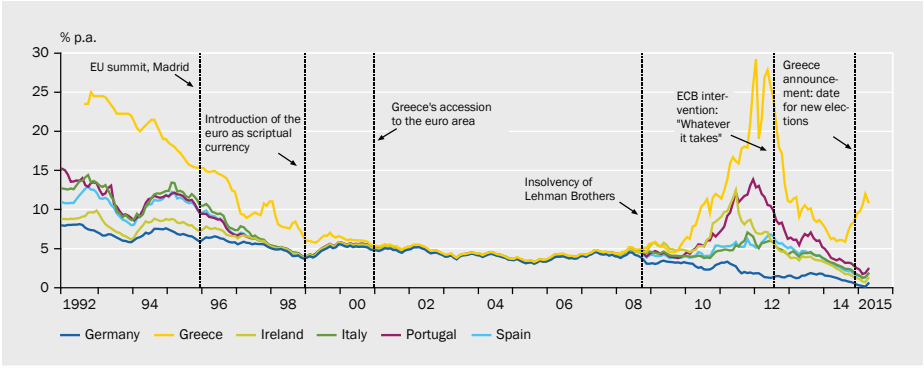


1 – Number of breaches of the yearly budget deficit of 3% as a percentage of nominal GDP according to the Maastricht Treaty.

Source: Eurostat.

During this period, neither the Stability and Growth Pact nor financial markets exercised sufficient discipline over fiscal policy. Despite substantial differences in macroeconomic and fiscal policies, member countries were able to access financial markets at almost identical yields between 2001 and 2007 (see Figure 2). The absence of significant differences in yields was not surprising. Rather it was encouraged by financial regulations and the policies of the ECB. Member countries' government bonds were treated equally in the collateral rules of the ECB's refinancing operations and in the regulation of banks where Eurozone sovereign bonds were assigned zero risk weights.

Figure 2. Long-term government bond yields[1]



1 – Government bonds with a residual maturity of around 10 years.

Source: Eurostat

This constellation provided no incentives for conservative fiscal policies. As a result of expansive policies prior to 2007, some member countries lacked sufficient fiscal space when the global financial and economic crisis hit the Eurozone. At the same time, there was no crisis mechanism available within the monetary union that would have been capable of overcoming a systemic crisis. Such a crisis mechanism evolved only gradually after the Eurozone debt crisis broke out, and only in parts. A forceful intervention by the ECB succeeded in calming financial markets in July 2012. By linking the outright monetary transactions to the conditionality of the European Stability Mechanism programme, the ECB entered a grey area between monetary and fiscal policy (GCEE Annual Economic Report 2013, paragraph 253).

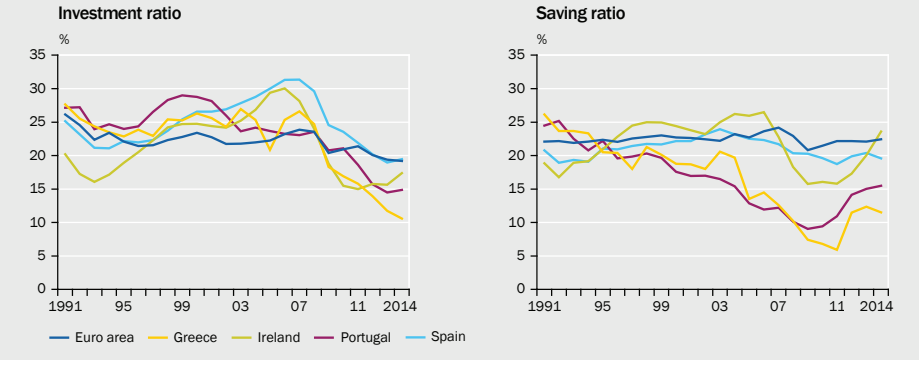
The principle of unified liability and control was also violated in banking regulation and supervision. In the currency union, the member countries jointly bear the risks on the ECB's balance sheet. If banking supervision and resolution are organised at national level, incentives are created to shift the liability for risks in the domestic banking system to the European level (GCEE Annual Economic Report 2013, paragraph 270). As a result, there was little incentive to limit the build-up of excessive debt by the banking system. In addition, there was a tendency to delay the restructuring of the domestic banking system in a crisis. This was reinforced by the fact that banks themselves were important creditors of member countries' governments, which laid the ground for a

vicious circle of bank and sovereign debt crises. Hence, the absence of a common bank supervision and a credible common resolution mechanism represented another fundamental problem of the monetary union.

The build-up of public and private debt as prelude to the crisis

The introduction of the euro and the liberalisation of European financial markets were accompanied by a drastic reduction in country-specific risk premiums. This reduction implied a massive improvement in financing conditions for private and public borrowers in many Eurozone member countries from the mid-1990s onwards. As a consequence, the Eurozone experienced high capital flows between member countries and corresponding changes in the macroeconomic saving and investment ratios (Jaumotte and Sodsriwiboon 2010). Initially, these flows could be motivated by the anticipation of higher growth in countries with lower per-capita income. It seemed appropriate that such countries imported foreign capital in addition to domestic savings in order to increase investment. However, notably in Greece and Portugal, saving ratios declined considerably between 2001 and 2007 while the investment ratio remained unchanged or even weakened – see Figure 3.

Figure 3. Investment and saving[1]

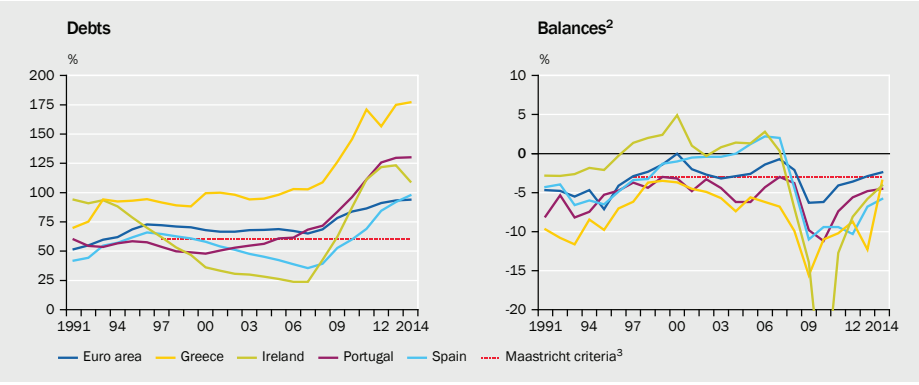


[1] Investment and saving in percent of nominal GDP.

Source: Eurostat.

The improved financing conditions reduced the interest burden on public budgets and could have served to reduce the stock of public debts over time. See Box 1. However, the relief was not used for debt reduction. See Figure 4.

Figure 4. Government debt and government balance[1]

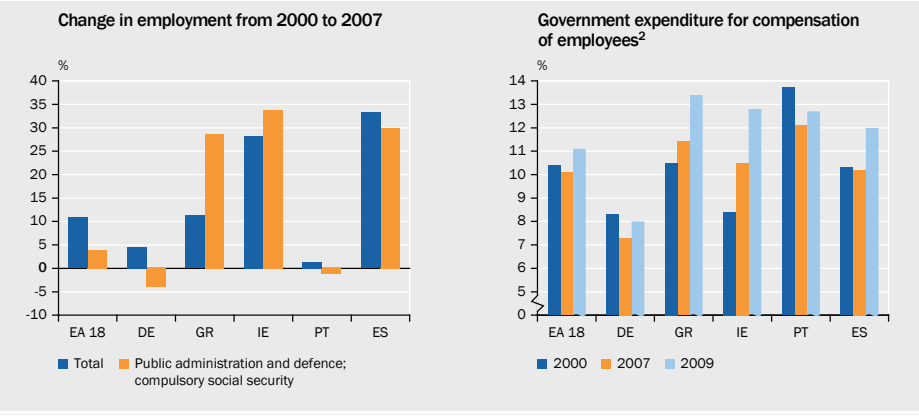


[1] in percent of nominal GDP
[2] Until 1998 IMF data, then data from Eurostat to ESA 2010; for the Eurozone and Greece until 2010 by the ESA 95
[3] Maximum debt 60% and maximum budget balance -3% under the Treaty of Maastricht.

Sources: Eurostat, IMF.

Additional public funds were often used for government final consumption expenditure rather than for capacity- and productivity-enhancing investment. This outcome can be illustrated by the development of public sector employment and wages. See Figure 5. In Greece, for instance, public sector employment rose by more than 25% between 2000 and 2007. Spending on public sector employees doubled from around €14 billion to €28 billion. The increase in government spending exceeded inflation also in other areas, for example, pensions (OECD 2011a).

Figure 5. Employment and compensation of employees[1]



[1] EA-18 – Eurozone (18 countries), DE – Germany, GR – Greece, IE Ireland, PT – Portugal, ES – Spain.

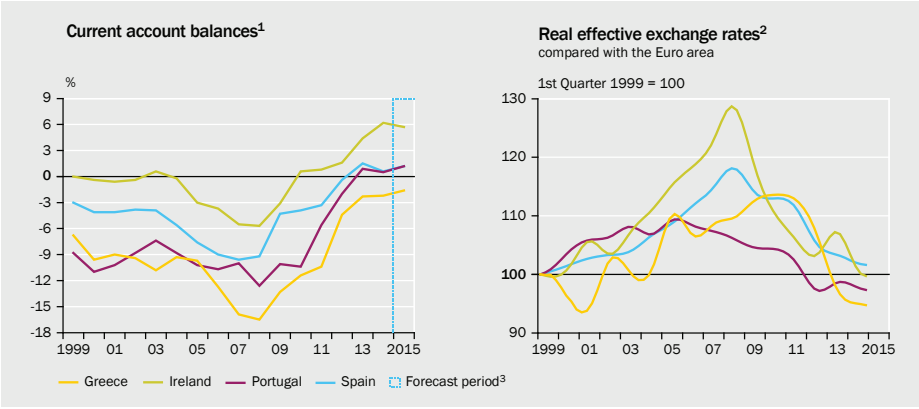
[2] in percent of nominal GDP

Source: Eurostat.

Spain and Ireland, contrary to Greece and Portugal, did not violate the SGP prior to 2007. They reported public budget surpluses for several years and were able to reduce their stocks of public debt. In these countries, macroeconomic vulnerabilities built up mainly in the private sector. The improved financing conditions following the introduction of the euro triggered significant credit growth, particularly in the household sector. Ample credit led to excessive booms in the real estate sectors of some countries (GCEE Annual Economic Report 2013 box 26). Lack of regulation, insufficient supervision and loose monetary policy all contributed to the credit boom.

Despite the different origins of the sharp rise in overall indebtedness, it had similar effects in these economies. They suffered a considerable loss in price competitiveness during the debt-financed booms, due to major wage increases and high inflation. Consequently, domestic export companies were put at a competitive disadvantage and lost trade shares. The loss of price competitiveness combined with the debt-financed increase in domestic demand and the associated imports resulted in high current account deficits – see Figure 6. For instance, Greece and Portugal reported average current account deficits of around 10% of GDP between 2000 and 2007.

Figure 6. Current account balances and real effective exchange rates



[1] in percent of nominal GDP.

[2] On unit labour costs basis.

[3] Forecast of the European Commission.

Source: European Commission

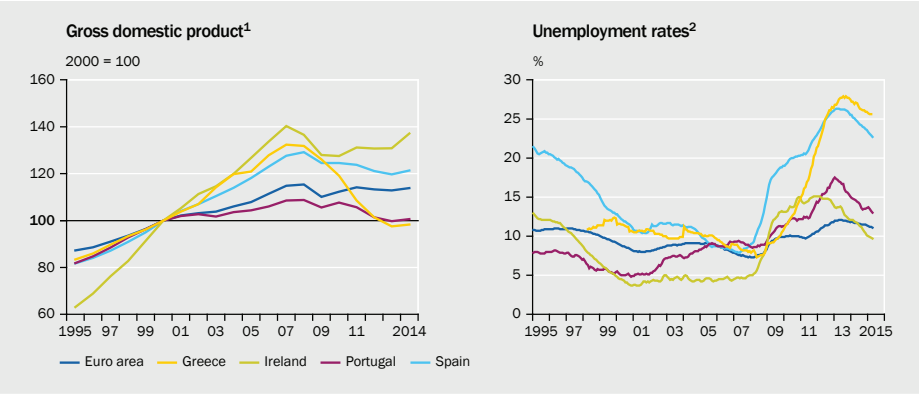
Developments in countries with adjustment programmes from 2008 onwards – three success stories and one failure

Prior to 2007, growth in the four countries that later underwent adjustment programmes had relied on strong capital inflows. Investors either expected that growth could be sustained, or that the no-bailout rule would be suspended in the event of a crisis, and therefore did not demand appropriate risk premiums. Following the outbreak of the global financial crisis, the world economy went into recession. Investors had to reassess the likely profitability of past investments, primarily in the real estate sector. Additionally, uncertainty with regard to potential losses and whether the involved banks and financial institutions could bear them cast doubts on the stability of the financial system. The resulting drop in demand spread to other national economies via global trade.

A systemic financial crisis unfolded throughout Europe and caused distrust among financial market participants. Accordingly, risk premiums rose sharply. New loans were subjected to increased scrutiny. Even Germany saw a tightening of lending

standards. Increasingly, financial markets focused on the structural problems of the later programme countries.

Figure 7. Indicators for economic development



[1] Real values, seasonally and calendar-adjusted.

[2] In relation to the labour force.

Source: Eurostat.

Once the crisis had broken out, market participants increasingly discussed the loss of competitiveness experienced by Greece, Ireland, Portugal, Spain and other countries such as Italy or France. Unfavourable fiscal positions led to sovereign debt crises in Greece and Portugal. Ireland and Spain – with initially low public debt – came under pressure because their public budgets had to assume the burden of non-performing loans in order to support their banking systems. Banking systems all over the Eurozone were supported by vast amounts of public funds. In Ireland, for instance, the costs of the 2009-2011 bank rescue operations alone caused an increase in the government debt ratio of some 40 percentage points (Laeven and Valencia 2012). Hence, the weakness of banks substantially contributed to build-up of public debt in these countries.

Doubts regarding the solvency of the crisis countries triggered a sharp rise in risk premiums for government bonds. A vicious circle of rising debt, dwindling trust and increasing risk premiums followed, which further impaired the stability of financial systems. Greece was the first member country forced to make use of assistance loans

from the IMF and the European partners in May 2010. With the European Financial Stability Facility and European Financial Stability Mechanism, a system of European rescue funds was created. In part it was hoped that the mere existence of a rescue fund would generate sufficient trust and prevent a worsening of the crisis in other countries. However, this was not the case. Subsequently, Ireland and Portugal were also forced to apply for assistance loans combined with a macroeconomic adjustment programme in November 2010 and April 2011 respectively. Spain followed suit in July 2012 with an assistance loan to support its banking system.

The rescue package was based on the 'loans for reforms' rationale, i.e. rescue loans were granted in exchange for the implementation of extensive reforms. These included fiscal consolidation, structural measures to regain price competitiveness, deregulation of goods and factor markets, and improvements of the institutional framework. Implementing these measures represented a major social and economic challenge for the governments of all programme countries. They all saw a massive decline in employment. Labour mobility was only partly able to mitigate the rise in unemployment – see Figure 7, right panel.

In Ireland and Portugal, the agreed reforms were largely successfully implemented. The IMF's evaluation of the Irish adjustment programme shows that Ireland achieved the agreed programme objectives almost completely and on schedule (IMF 2015). Portugal was also successful in implementing the agreed measures in its macroeconomic adjustment programme (EU Commission 2014). However, the development of the Portuguese economy has not been as dynamic as that of Ireland.

The Greek economy fared much worse, although the first signs of positive growth had become visible in 2014. The lack of progress in Greece has prompted many voices – including the newly-elected Greek government – to question the rescue policy in its entirety. Yet the situation in Greece should not be taken as proof of failure of rescue policies as such. We discuss the developments in Greece elsewhere in more detail (GCEE Special Report 2015).

Ireland, Portugal and Spain have now exited their rescue programmes, thanks to successful consolidation and reforms, as well as the ECB's extensive monetary easing. The economies of these countries are recovering – there is a marked decline in unemployment in Spain and Portugal, and gross value added has been on the rise since last year. The development in Ireland has been particularly positive, partly owed to its comparatively flexible labour market and the recovery of key trade partners, in particular the US and UK.

Two fundamental weaknesses

The crisis in the Eurozone has revealed two fundamental weaknesses.

- Firstly, there was a lack of economic and fiscal policy discipline, accompanied by dysfunctional sanctioning mechanisms, leading to the build-up of huge public and private debt levels and a loss of competitiveness; and
- Secondly, there was no credible mechanism for crisis response that would be able to reign in moral hazard problems and establish market discipline – this concerned the handling of bank and sovereign debt problems.

These institutional deficits contributed to economic imbalances in the economically heterogeneous currency area, which made the economies of some member states vulnerable to a deepening of the crisis. In the aftermath of the global financial crisis, these imbalances led to government debt crises in Greece, Ireland, Portugal and Spain and ultimately threatened the cohesion of the entire Eurozone.

Given these developments, macroeconomic adjustment was unavoidable in crisis countries. The adjustment required wage and price changes, as well as fiscal consolidation and structural reforms to enhance competitiveness. These steps are associated with painful cutbacks affecting the populations of the respective countries.

To support the crisis countries in this process and stabilise their financial systems, adjustment programmes were agreed with the affected countries. These programmes

followed the 'loans for reforms' rationale. The crisis countries were responsible for implementing the reforms themselves. The prerequisite for the success of this model was ownership, i.e. the willingness and ability to reform. The rescue policy of 2010-2014 helped avert a systemic crisis and maintain the cohesion of the monetary union. The time was also used to implement substantial reforms to make the monetary union more resilient against economic crises. Ireland, Portugal and Spain have been able to regain investors' trust. They are experiencing an economic recovery, although unemployment remains high.

Greece remains in deep difficulties. The confrontational course of its new government and the conflict with its European partners revealed political weaknesses of the Eurozone. Completing the currency union's architecture and achieving credibility for its rules are key, given the heterogeneity and rigidity of its member countries' economies. In this column, we have abstained from laying out our proposal for completing the euro's architecture. Our proposal, entitled Maastricht 2.0, will be presented in a subsequent volume. Many of the steps taken so far aimed at creating a crisis mechanism, strengthening fiscal rules and forming a Banking Union are consistent with the Maastricht 2.0 framework that we have envisioned. Yet there are a number of important gaps that still need to be filled. The key objective is to restore the unity of liability and control. This objective requires resurrecting the no-bailout rule and rendering it more credible than in the past.

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The Eurozone crisis: Too few lessons learned

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What have we learned from the Eurozone crisis? This column argues that, very much unfortunately, we haven't learned that much. In desperate need of a way out of the current impasse, economists and policymakers are imagining a menu of solutions. A grand panacea seems implausible, at present. So the way to proceed should follow the time-honoured European method – 'functionalism'. The EU and the ECB must focus on modest tasks, dealing with them one by one, if we are to find our way out of the current mess.

The Eurozone crisis started in early 2010. Five years later, growth is miserable and is forecasted to remain miserable (European Commission 2015). Governance is in disarray as the tragic summit of 13 July showed.

Political considerations have trumped economic analysis, maybe because we economists have been unable to come up with a collective view. More likely, politicians have reluctantly been led to micromanage complex technical issues as the result of an amazing accumulation of economic mistakes, which they are unwilling to recognise (Wyplosz 2014).

The debate on the economic causes of the crisis will continue to be perfectly confusing. Authors typically focus on their pet explanations, using a slew of carefully selected data, within partial equilibrium analyses that allow them to ignore the elementary distinction

between endogenous and exogenous variables. For example, what can we conclude from studies that consider as exogenous the current account, capital flows or inflation differentials? In any vaguely general equilibrium setup, these are endogenous variables.

On the other hand, some policy failures can be identified and treated as exogenous to some degree.[1] In some crisis countries, fiscal indiscipline can hardly be dismissed as the exogenous trigger. In others, a sharp reduction of interest rates led to unchecked credit growth and to housing bubbles. This suggests faulty banking supervision. Poor bank resolution and the absence of a lender of last resort translated banking crises into debt crises. These policy failures must be part of any explanation.

One aspect that is less studied is the mismanagement of the crisis. How has it been possible that political leaders did not benefit from professional advice? Why have they accepted discussing, meeting after meeting, the technicalities that are normally dealt with at the level of Sherpas, Sous-Sherpas and the like? What happened to the European Commission, which employs a large number of competent economists? Why has the IMF, the world expert on economic and financial crises, been at best side-lined and at worst become willing to compromise its intellectual reputation?

Lessons from the crisis

The simple answer to these questions is that the European treaties never anticipated that there could be such a crisis. This is normal, after all. Crises are crises because they are not foreseen. Still, there have been voices warning of treaty imperfections that could lead to banking crises (Begg et al. 1998). Similarly, there was no lack of early warnings that the Stability and Growth Pact would not be able to deliver fiscal discipline, a necessary condition within a monetary union. Moreover, the debate on the community vs. the intergovernmental method, which is as old as the Treaty of Rome,

1 A large literature seeks to endogenise policies. This literature is important and most helpful, especially when it links failures to institutions. This is the spirit of this essay.

has never been resolved, leaving the EU in a vacuum that would prove lethal in the event of a crisis.

To make matters worse, we believed in the fairy tale that the ECB is 'the most independent central bank in the world' because its statutes say so and cannot be changed realistically. Yet, it has been painfully obvious that the ECB has been behind the curve throughout the crisis. Its inability to emulate world-class central banks reminds us of the Bank of Japan throughout this country's two lost decades, which was then under the domination of the Ministry of Finance. Truth is that the ECB has been mesmerised by diverging public opinions.

The Five President Report intends to frame the policy responses. Unfortunately, it is an unimaginative catalogue of pious statements that call for 'more Europe', without any analytical justification. Of course, a fiscal union or a political union, for whatever these vague terms may mean, would be wonderful and might even deal with some of the problems – if they were well done.

- Everyone knows, however, that no further transfers of sovereignty are now possible.

A much deeper Europe is simply not thinkable at a time when the rising political forces are the Front National in France, the Five Star Movement in Italy, Podemos in Spain, True Finns in Finland, the Party for Freedom in the Netherlands and, until recently, the Alternative in Germany.

- Arguing for a fiscal union or a political union is the intellectually lazy response.

The challenge for Europe is not to mimic the USA, which is beyond reach for a generation or two, but to find institutional answers that are as original as the Single Currency.

Banking

Only one of these severe institutional failures has been dealt with, but only partly. The Banking Union still lacks a single resolution authority, an unwieldy 'mechanism' is not enough. It does not have a lender of last resort. The European Stability Mechanism offers conditional and limited support that is not up to a systemic banking crisis and the €50 billion resolution fund-to-be only serves as a reminder that the US Troubled Asset Relief Program mobilised $400 billion, most of which was spent in bank recapitalisation.

The biggest prize so far is the Single Supervision Mechanism, which has remained silent on the situation of the Greek banks, widely seen as bankrupt. Its only action has been to announce stress tests in September. Real supervisors act in a matter of hours.

Fiscal discipline

Establishing a proper fiscal discipline framework remains an unfulfilled vital necessity. The policy response has been more of the same, just worse.

- The Stability and Growth Pact is in permanent contradiction with budgetary sovereignty.

Making it 'stronger' only sharpens the contradiction. Burying attempts to undermine national sovereignty in extensive bureaucratic exercises (the European Semester, the Excessive Deficit Procedure and the Macroeconomic Imbalance Procedure) is unlikely to work.

- There is no alternative to scrupulous respect for the no-bailout clause, which has been repeatedly undermined since 2010.

Replacing intrusive ex post conditions with a clear ex ante rule stands to set incentives straight. Fiscally undisciplined governments and their lenders must know with 100% certainty that they will not be bailed out. This should be a no-brainer; the real challenge is working out how to restore the clause.

Central banking

The ECB has had to face asymmetric shocks, the scourge of monetary unions when the common monetary policy is bound to be seriously sub-optimal in most countries. On top of conflicts of interest, the crisis has also brought to the surface deep disagreements on economic principles and policy responses that had been muted during the easy years of the Great Moderation.

- Generally accepted macroeconomic principles have collided with the Hayekian and 'ordoliberal' ideas prevalent in Germany.

These disagreements have percolated to the Eurosystem's Governing Council, leading to long delays in dealing with the crisis.

In principle, vigorous intellectual debates are healthy but they can be crippling if they boil down to unresolved disagreements intertwined with conflict of interests. Policymaking institutions cannot function effectively in such conditions. Internal debates must remain confidential and give way to wholehearted support for decisions once they are made. A central bank can only be independent if it earns the support of the public opinion. When there are different public opinions that follow national lines, this becomes mission impossible.

It may be reassuring to remember that the US faced a similar situation during its first century and even during the early years of existence of the Fed. Somehow, the influence of strongly held national views will have to be limited. Since it is unlikely that the treaties can be changed, the ECB must be given the means to recover effectiveness.

One specific issue can be dealt with within the treaties. As it interacts with banks on the money market, the ECB accepts as collateral, and sometimes purchases a large menu of assets, including public debt instruments. This has served it well during the financial crisis but it has had deleterious effects once the sovereign debt crisis set in.

A logical way out for non-crisis times is for the ECB to only deal with assets that are truly European. Eurobonds or the ECB own debt paper could become the only accepted instrument, thus removing the vexing problem of potential losses attached to national bonds.

Crisis management

Finally, effective crisis management conflates all the ambiguities of European governance. The Community Method was lost when governments rightly considered that there were deep fiscal implications. The intergovernmental method was crippled for two reasons. First, not all EU members have adopted the euro so some governments had to be excluded. Second, 18 governments cannot manage a crisis. For a variety of reasons, the largest country exercised leadership. Even if the decisions thus taken were correct, this is plainly not acceptable.

Unfortunately, the solution will be very difficult to imagine. Unsurprisingly, the response of the Five Presidents is to look for some 'European government' with real powers, including a budget and taxing power alongside a Eurozone parliament. As argued above, this solution is most unlikely to be politically possible. The German Finance Minister has suggested reducing the role of the Commission, thus further eroding the Community method. However, this means politicising crisis management, a sure recipe for ineffectiveness and divisiveness.

Conclusion

Some solutions are reasonably easy to envision, others will require a huge research effort and the even bigger ability of politicians to challenge their own conventional wisdom. If a grand solution is impossible, the way to proceed is likely to follow the time-honoured European method called 'functionalism'. This means focusing modestly on tasks and making it possible to deal with them one by one. The ECB is in charge of

monetary policy and financial stability. Fiscal discipline requires a new framework. The banking union must be completed. Crisis management remains a black hole.

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The Eurozone crisis emerged five years ago and is a long way from finished. Growth is miserable and unemployment – especially among the young – is unconscientiously high and expected to stay that way for years.

As a first step to finding a consensus on how to fix the Eurozone, a couple of dozen world-renowned economists were asked a simple question: "What caused the Eurozone Crisis?" Although they hark from a wide range of perspectives, a remarkably consistent answer emerges.

- Excessive, cross-border foreign lending and borrowing among EZ members in the pre-crisis years – much of which ended up in non-trade sectors – was why Greece's deficit deceit in 2009 could trigger such a massive crisis.

At its core, this as a classic 'sudden stop' crisis – not a public debt crisis.

Some of the intra-EZ lending and borrowing in the 2000s went to private borrowers (especially in Ireland and Spain) and some to public borrowers (especially in Greece and Portugal). When trust evaporated in 2010 and 2011, most of it ended up in government hands. As EZ governments cannot devalue or force their central bank to finance public debt, euro members who relied heavily on foreign lending had to be bailed out.

The ultimate causes of the EZ crisis were thus:

- Policy failures that allowed the imbalances to get so large;
- Lack of institutions to absorb shocks at the EZ level; and
- Crisis mismanagement.

This eBook is the first step towards developing the academic insight necessary to formulate a broadly shared view on what needs to be done to end the current crisis, to restore growth, and to reduce the frequency and severity of future crises.

This publication is the first in a series of efforts under CEPR's Rebooting Europe programme that aims to provide a deep and broad rethink of today's European socio-economic-political system – an updating of Europe's 'operating system', so to speak.

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