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**THE EUROZONE'S BAD BETS:
A BEGINNER'S GUIDE TO THE
EUROZONE CRISIS**

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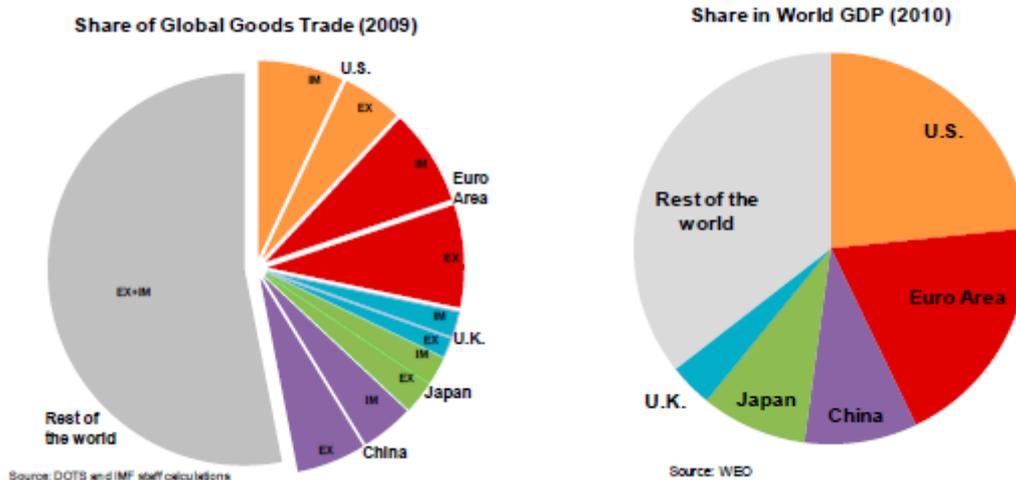
The Eurozone's Bad Bets: A beginner's guide to the Eurozone crisis¹

Mark Thirlwell

The Eurozone experiment has rested on a series of big economic and political bets. It's now clear that almost none of them have paid off. European Monetary Union is no longer sustainable in its current incarnation. The Eurozone's long-term future therefore depends on whether European leaders are able to deliver the institutions needed to make the currency union work, and on whether they can do so quickly enough to avoid an outright collapse.

The Eurozone

At the time of writing, 17 EU member states had adopted the euro as their currency: Austria, Belgium, Cyprus, Estonia, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Malta, the Netherlands, Portugal, Slovakia, Slovenia and Spain. This currency area comprises a substantial part of the global economy: as of 2010 it accounted for about one-fifth of global output when GDP is measured at US dollar rates and a bit more than 14 per cent of the total when output is measured at purchasing power parity rates. It also accounted for a larger share of world trade than any other economy:

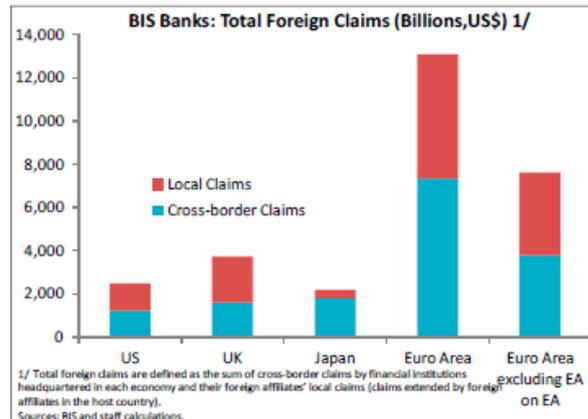
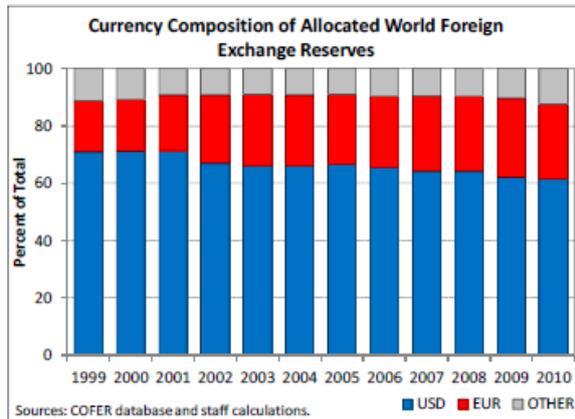


Source: International Monetary Fund (IMF), *Euro Area policies: Spillover Report for the 2011 Article IV Consultation and Selected Issues*. (2011)

In addition, the Eurozone boasts one of the largest financial sectors in the world, it has banking exposures to other economies which are larger than that of any other economy, and despite its

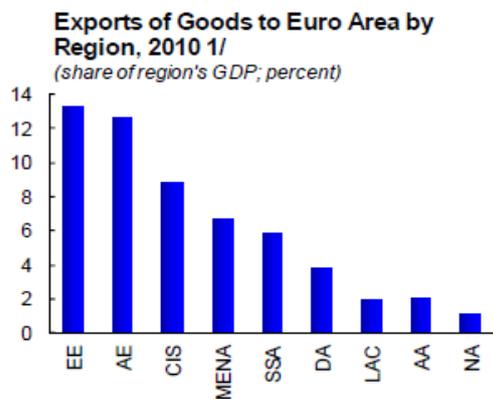
¹ Some of the arguments here were originally set out on the Lowy Institute's blog, *The Interpreter*.

current tribulations, the euro remains (for now) the world's second most important reserve currency.

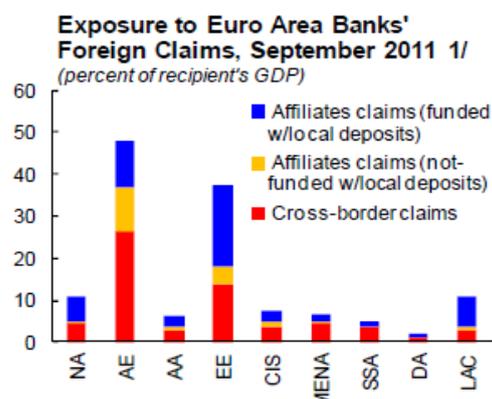


Source: International Monetary Fund (IMF), *Euro Area policies: Spillover Report for the 2011 Article IV Consultation and Selected Issues*. (2011)

Substantial trade and financial linkages mean that the rest of the global economy is significantly exposed to developments in the Eurozone. Not surprisingly, these linkages, and hence the degree of exposure, are largest with other European (non-Eurozone) economies. In addition, however, the countries of the former Soviet Union, the Middle East and North Africa, and Sub-Saharan Africa are also all heavily dependent on exports to the Eurozone. Exposures through financial linkages tend to be more limited outside of the rest of Europe, although European banks have played an important role in areas such as trade finance.²



Sources: IMF, *Direction of Trade Statistics*; and IMF staff calculations.
1/ AA: Advanced Asia; AE: Advanced Europe excluding euro area countries; CIS: Commonwealth of Independent States; DA: Developing Asia; EE: Emerging Europe; LAC: Latin America and the Caribbean; MENA: Middle East and North Africa; NA: North America (Canada and US); SSA: Sub-Saharan Africa.



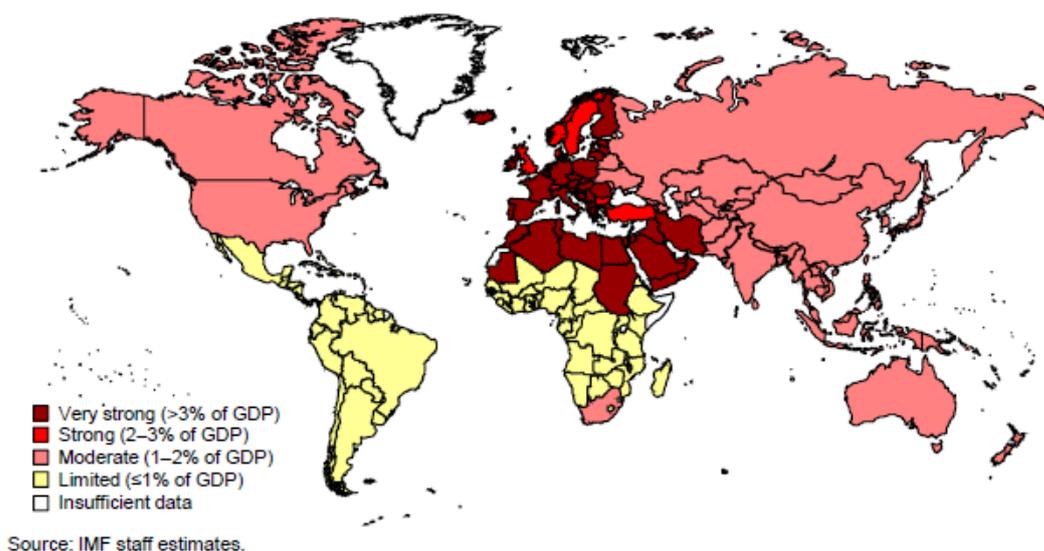
Sources: Bank for International Settlements (BIS); Cerutti (2011); and IMF staff estimates.
1/ AA: Advanced Asia; AE: Advanced Europe excluding euro area countries; CIS: Commonwealth of Independent States; DA: Developing Asia; EE: Emerging Europe; LAC: Latin America and the Caribbean; MENA: Middle East and North Africa; NA: North America (Canada and US); SSA: Sub-Saharan Africa.

Source: International Monetary Fund (IMF), *Global risk analysis. Annex to Umbrella Report*. (2012)

² International Monetary Fund (IMF), *Global risk analysis. Annex to Umbrella Report. Towards Lasting Stability and Growth: Umbrella Report for G-20 Mutual Assessment Process*. Washington DC, International Monetary Fund, 2012.

IMF simulations find potentially significant spillover effects from any intensification of the current Eurozone crisis for the rest of the world economy:

The Effects of an Intensified Euro Area Crisis on Various Regions
(peak deviation of output from WEO baseline)



Source: International Monetary Fund (IMF), *Global risk analysis. Annex to Umbrella Report*. (2012)

Europe's quest for exchange rate stability

The current crisis is a product of two long-running quests by European policymakers: their ambitions for a closer and deeper European Union and their search for intra-European exchange rate stability. The origins of both quests can be found in the economic instability of the interwar years, in the two terrible conflicts that bookended that period, and in European policymakers' admirable determination to avoid any repetition of those disasters.

From the start, the journey towards European integration has involved an important currency component. Thus the Treaty of Rome, which established the European Economic Community (EEC) on 1 January 1958, acknowledges that the exchange rates of member countries should be regarded as a matter of 'common interest'.³

The fixed-but-adjustable pegged exchange rates and capital controls that comprised the post-war Bretton Woods system initially appeared to offer Europeans currency stability, albeit on a global rather than a regional basis. But even before Richard Nixon announced on 15 August 1971 that the United States would abandon the arrangement, it was clear that the system was in terminal trouble.

Europeans, meanwhile, were busy making plans to create a regional system of their own. A meeting of leaders that took place in The Hague in December 1969 resulted in the decision to adopt the 1970 Werner Report and its recommendations that Western Europe should aim for monetary union via

³ Calls for some version of monetary union in Europe have been around since at least the nineteenth century.

the route of a progressive hardening of exchange rate commitments.⁴ These efforts were given further impetus by the prevailing global macroeconomic conditions of US dollar instability and rising inflationary pressures. The specific case for *European* exchange rate stability was boosted by the growing importance of intra-European trade, by concerns that the working of the Common Agricultural Policy could be disrupted by exchange rate swings, and by a more general sentiment that excessive volatility in European exchange rates could jeopardise the EEC project itself.⁵

In 1972 the six original members of the EEC adopted the Basle Agreement and established the European 'snake in the tunnel'. The plan was to limit the exchange rate movements of member states (the snake) to a narrow fluctuation band against the US dollar (the tunnel).

The snake was a failure. Over the course of the 1970s the world economy suffered a series of major shocks, including the 1973 oil price spike and the 1974 commodity boom. European policymakers ended up responding to these shocks quite differently, and the resultant divergence in economic policy and performance culminated in a series of currency crises: between 1972 and 1978 the UK, France, and Italy (among others) were all forced out of the arrangement, sometimes repeatedly. When forced to choose between exchange rate stability and the need to flex policy elsewhere, some policymakers decided to sacrifice the latter. By the end of 1977, only a subset of EEC Member States remained within the snake, and the Werner Plan had been ditched.

Europe's next effort to deliver exchange rate stability came the following year, when the Brussels Summit of December 1978 proposed replacing the snake with a European Monetary System (EMS). The EMS went into operation in 1979, with the European Exchange Rate Mechanism (ERM) comprising a system of fixed-but-adjustable exchange rate pegs based on central parities against a constructed European currency unit (*ecu*) which were subject to an initial $\pm 2.25\%$ fluctuation band ($\pm 6\%$ for the Italian lira) and which came with the option to subsequently adjust the central parity itself.

The EMS and ERM also appeared to constitute a natural accompaniment to the push for a single European market, as embodied in the 1986 signing of the Single European Act. Getting rid of exchange rate instability was intended to complement the drive to a single market by both increasing transparency and reducing transactions costs for trade and investment.

In the early years of its operation, the ERM was a relatively flexible system, one which allowed for periodic currency adjustments. It was also supported by the widespread presence of capital controls. But from 1987 onward the ERM morphed into a more rigid system of fixed exchange rates, and for more than five years there were no changes in parities. In part, this rigidity reflected a European-wide dismantling of capital controls as part of the single market process, as growing cross-border capital flows made it increasingly difficult to deliver smooth currency realignments.

As with the snake, the more rigid version of the EMS-ERM ultimately failed to cope with a series of severe shocks (this time a global recession and German economic and monetary unification), and this first version of the ERM (ERM 1) was blown apart by a series of exchange rate crises over the

⁴ See European Parliament Fact Sheet on the historical development of monetary integration, available at http://www.europarl.europa.eu/factsheets/5_1_0_en.htm.

⁵ Barry Eichengreen, *Globalizing Capital: a history of the international monetary system*. Princeton, Princeton University Press, 1996.

course of 1992-93 as Sweden, Italy and the UK were all forced to abandon their exchange rate pegs once they'd decided that the domestic pain involved in trying to stay in the system was too great. The surviving member economies ended up having to adopt much wider fluctuation bands ($\pm 15\%$), signaling a major retreat from the quest for exchange rate stability.

Once again, however, this economic setback did not signal the abandonment of the political project, and the retreat from fixed exchange rates proved temporary. A revised version of the ERM (ERM2) persisted and meanwhile, the European Council had adopted the Delors Plan for European Economic and Monetary Union at the Madrid Summit. A revised version of that plan then became part of the Maastricht Treaty, as signed on 7 February 1992. Maastricht then entered into effect on 1 November 1993, creating the European Union (EU).⁶

Maastricht set the completion of European Monetary Union (EMU) as a final objective. It also established the need for a degree of economic and policy convergence in European economies as a precondition for a successful union, setting out a series of convergence criteria for prospective members:

- **Inflation** would have to be no more than 1.5 percentage points higher than the average of that prevailing in the three best-performing member states;
- **Long-term interest rates** could be no more than two percentage points above the average rate of the three best-performing member states;
- The **budget deficit** had to be less than 3% of GDP;
- **Public debt** had to be less than 60% of GDP;
- And a country had to be a member of ERM2 for at least two years and avoid any major changes to its parity over that period.

In January 1999, parities between the 11 countries then participating in the euro and meeting the Maastricht criteria were fixed, and a new European Central Bank (ECB) took over responsibility for monetary policy. Then, in January 2002, euro notes and coins were introduced.

The establishment of the euro therefore represented the culmination of a long-standing quest for currency stability.

That said, it also reflected the particular political circumstances of its time, specifically, the French response to the collapse of the German Democratic Republic and the looming prospect of German Unification. France saw Maastricht as a way of binding Germany into the European project in the form of a deal by which the French would overcome their nervousness about a united Germany by getting Bonn (as it still was then) to sign up for ever-closer union, including by surrendering Germany's cherished DM for the euro. In return for sacrificing the DM, Bonn would get a euro that would be as close to the old DM as possible, with an ECB modeled on the Bundesbank and strong policy commitments to tight money and fiscal rectitude.

These commitments included Article 123 of the Maastricht Treaty, which explicitly ruled out direct monetary financing of Eurozone budgets, and Article 125, which stipulated that there would be no bailouts within the Eurozone. Fiscal rectitude would also be guaranteed by a Stability and Growth

⁶ Technically, Maastricht created the three pillars of the European Union, with this structure only abolished in 2009 by the Treaty of Lisbon.

Pact (SGP), which set out limits on budget deficits and public debt in line with the Maastricht convergence criteria, along with financial penalties for countries found to be in breach:

*'Europe's finance ministers would thus be bound, Ulysses-like, to the euro-mast: unable to respond to the Siren-calls of voters and politicians for easier money and increased public spending.'*⁷

In fact, the SGP only survived in its original, restrictive form until 2004, when both France and Germany ran budget deficits in excess of 3% of GDP. Thereupon both countries made it clear that not only would they not be paying any fines, but that they would also make no commitment to return to a smaller deficit the following year.

Lessons from the euro's pre-history

This euro prehistory describes a pattern whereby European governments construct a system designed to minimise (or even do away with) exchange rate volatility, this system then works for a while, but once a large enough shock hits, it breaks down. Then those governments or their successors move on to construct a new system and the process starts over. In other words, individual schemes have tended to break down, but the underlying drive to a European region of exchange rate stability has persisted.

One way to think about this is in terms of choosing whether to bet on the economics (an economic shock will blow up whatever the current arrangements are) or to bet on the politics (that overarching commitment to currency stability). So far, the winning approach has been to bet on the economics in the short term and expect a currency crisis(es), but bet on the politics in the long term in anticipation that the overall project will continue, albeit in a revised form.

Meet the trilemma

But why has Europe's quest for currency stability proved so difficult and so crisis-prone? One way to think about this is provided by the so-called trilemma of international monetary economics.⁸ The trilemma says that policymakers can choose only two out of the following three policy options:

1. A fixed exchange rate;
2. An independent national monetary policy (that is, one under which local interest rates can diverge significantly from the 'world' rate); and
3. International financial integration / capital mobility.

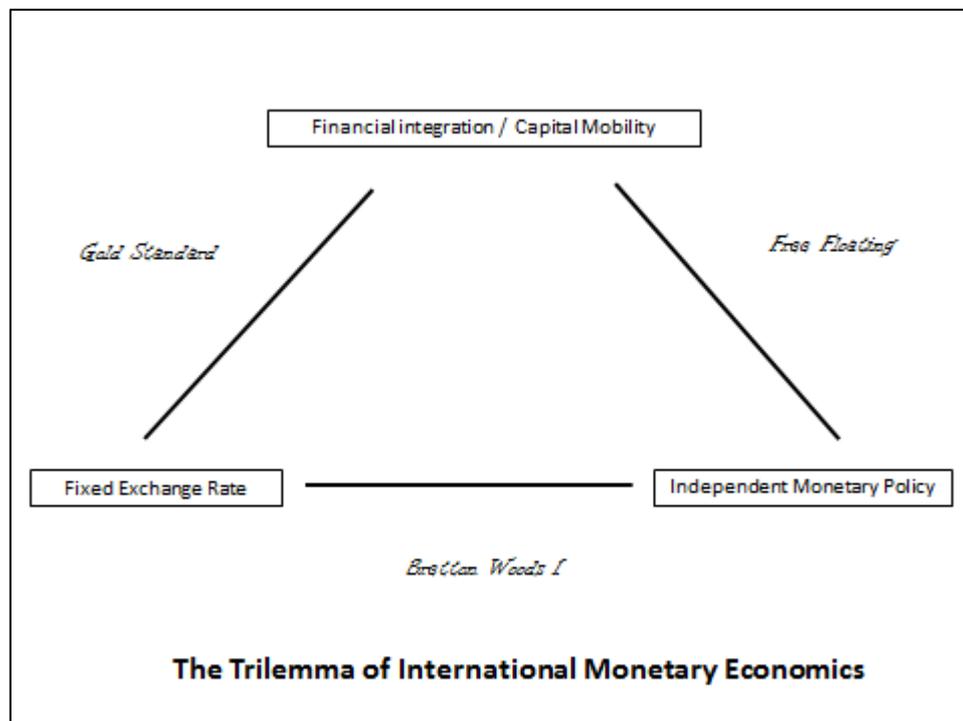
Typically, countries opt for different combinations of the trilemma depending both on their preferences and on their relative level of financial development. Australia, for example, has chosen options #2 and #3, allowing the value of the dollar to be set in global foreign exchange markets. In contrast, China has picked #1 and #2 and continues to impose significant capital controls.⁹

⁷ Tony Judt, *Postwar: A history of Europe since 1945*. London, Vintage Books, 2010.

⁸ Also known as the impossible trinity. Mark Thirlwell, *Meet the trilemma*. International Economy Comments #7. Sydney, Lowy Institute for International Policy, 19 November, 2010.

⁹ For a skeptical view on the applicability of the trilemma to East Asia, see Stephen Grenville, *The impossible trinity and capital flows in East Asia*. ADBI Working Paper 318. Tokyo, Asian Development Bank Institute, 2011.

The history of international capital markets can be seen through the shifting trade-offs between these constraints.¹⁰ During the nineteenth century, for example, the Gold Standard combined fixed exchange rates, capital mobility, and very limited monetary independence. In contrast, the post-World War II Bretton Woods system comprised national monetary policies, fixed-but-adjustable exchange rates, and strict capital controls. In the modern era (at least up until the GFC), the trend had been towards free capital mobility again, although major emerging markets like China and India have continued to operate extensive capital controls.



While the trilemma is mainly a story about the fundamental incompatibility of certain economic policy choices, there is also an important role for domestic politics. This is because the decision to subordinate domestic monetary policy to the maintenance of a currency peg is a choice with political consequences. For example, in his history of the Gold Standard, Barry Eichengreen argues persuasively that one crucial reason that the Gold Standard worked well before 1914 but then broke down in the interwar period was the concurrent change in political circumstances.¹¹ Pre-war, economic policy and government were both in the hands of a relatively small elite, one that was more than ready to sacrifice domestic activity (and other people's jobs) in order to maintain the system. By the time of the interwar years, however, the extension of the franchise and the rise of political parties representing workers meant that the pain of adjustment now had political costs that were hard to bear.

¹⁰ Alan M. Taylor and Maurice Obstfeld, *Global capital markets: Integration, crisis and growth*. Cambridge, Cambridge University Press, 2004. For a short summary of the argument, see Alan M. Taylor, *Global finance: Past and present*. *Finance and Development* 41 (1) 2004.

¹¹ Barry Eichengreen, *Golden Fetters: The Gold Standard and the Great Depression*. New York, Oxford University Press, 1992.

The euro as a solution to the trilemma

The collapse of the ERM in the 1990s provides a good example of the trilemma at work. Remember, in its initial form, the ERM allowed for periodic exchange rate adjustments and operated in the context of capital controls. That combination still allowed some scope for domestic monetary policy autonomy. But once capital controls were abandoned and the system moved to a more rigid pegging of national exchange rates, the trilemma started to bite. In theory, then, under these conditions membership in the ERM meant opting for a fixed exchange rate and capital mobility and sacrificing independent monetary policy. Over time, however, markets began to doubt the strength of some governments' commitment to their exchange rate pegs. They were right to do so, since once the choice came down to bearing the political and economic pain entailed by sustaining the high interest rates needed to defend the currency peg, or abandoning that same peg and recovering national control over monetary policy, several countries found the latter choice the more palatable option.

The subsequent shift to the euro, then, can be interpreted as a more radical European solution to the trilemma than was offered by the snake and the ERM. It's a solution that has opted for a combination of capital mobility and an extreme version of a fixed exchange rate regime that entailed the complete abandonment of national exchange rates and the surrender of any option of a national monetary policy via outsourcing to the ECB.¹²

Note, however, that while Maastricht removed monetary policy from national hands, it left pretty much everything else – fiscal policy, financial supervision and regulation – still to be determined at national level. That would turn out to be a critical design decision.

The credibility problem

The euro could also be seen as a response to another, closely related problem.

By opting to fix the exchange rate, a government is simultaneously promising to abandon a great deal of policy flexibility. Most obviously, it's giving up the ability to devalue the nominal exchange rate. If it also wants to pursue a policy of international financial integration (that is, allow a high degree of capital mobility), then according to the trilemma, it is also surrendering the option to run an independent monetary policy. Finally, as evidenced by the repeated failure of currency pegs across emerging markets triggered by budget deficits incompatible with macro stability, it's also implicitly (or in the case of the SGP, explicitly) promising to adopt some constraints on the operation of fiscal policy.

Surrendering all of these policy options comes at a cost. If and when things get bad for the national economy – say it is hit by a nasty external shock – then there's always going to be a strong temptation for the government to rethink those earlier promises and try to recover those lost policy tools. This is the story of the demise of ERM1. And this is where the credibility problem comes in.

Markets, investors and depositors all understand this temptation for a government to renege on its promise to surrender its exchange rate and interest rate tools. Hence, even when a government

¹² Kevin H. O'Rourke, *A tale of two trilemmas*. IIS Discussion Paper No. 364/2011. Dublin, Department of Economics and Institute for International Integration Studies (IIS), Trinity College, March, 2011.

claims it will stick to an exchange rate peg, it's rational to believe that there is a risk that at some point in the future it will make sense for the government to break this promise. Deciding whether or not to trust to the longevity of any given exchange rate peg then involves a calculation as to whether the costs involved in sticking to the promise to peg are greater or less than the costs involved in renegeing. Inject enough doubt into this calculation, and the peg might well be doomed from the start. This calculation then also allows for the possibility of self-fulfilling speculative attacks: inflict enough pain, and the peg will break, and the initial 'doubts' about a government's commitment to the peg will be validated . . . even if that peg might have survived in the absence of the speculative attack.

The euro as a solution to the credibility problem

One way to mitigate this credibility problem is for a government to send a strong signal about the degree of commitment to the peg, and one way to do this is to make that commitment more binding. In a rough hierarchy of commitment, the lowest level of commitment might be a standard fixed exchange peg, followed by a currency board, and then a full monetary union, like the Eurozone.

By abandoning national currencies altogether and signing up to a regime which does not formally allow for an exit, member economies demonstrate the depth of their commitment to the exchange rate regime, and so (hopefully) boost the credibility of that commitment. Since the common assumption is that any attempt to exit the euro would trigger the 'the mother of all financial crises' in the departing country, the cost-benefit calculation described above is tilted heavily towards sticking with the euro. By making the exit option incredibly costly, the euro should deliver much more credibility than the snake or the ERM.

The Optimum Currency Area (OCA) debate

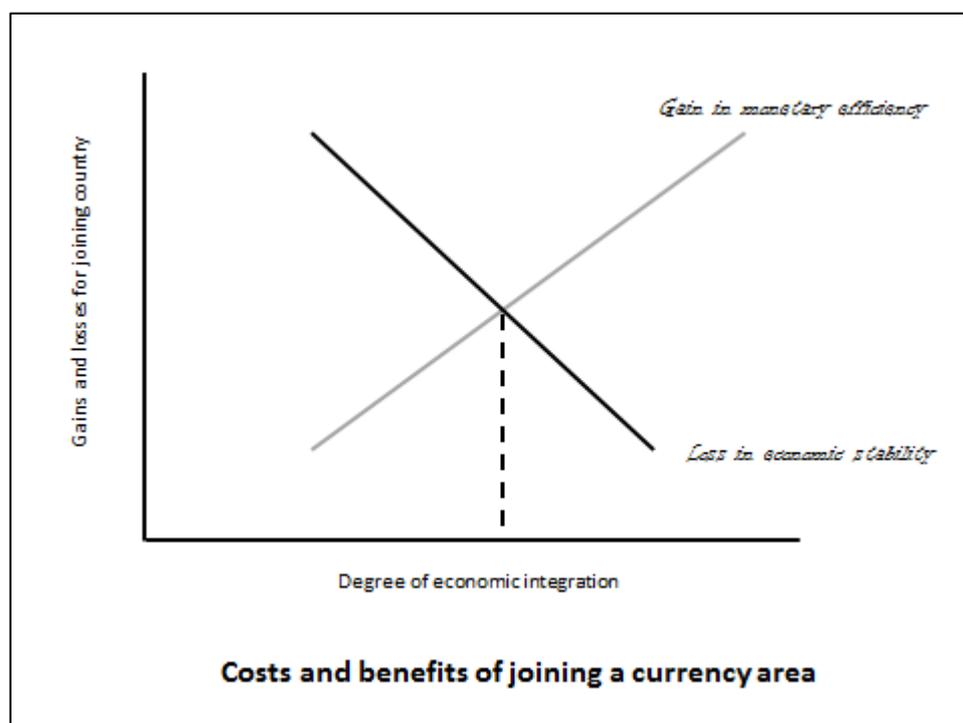
While adopting the euro may have offered solutions to the trilemma and the credibility problem, it still came at the cost of surrendering those monetary and exchange rate policy tools and (at least in theory) of accepting some constraints on fiscal policy. Did this trade-off make economic sense for the participating economies? The following diagram sets out a simple textbook exposition of the decision to join a currency union (like the Eurozone).¹³

The *benefits* from joining a currency union comprise the gain in monetary efficiency arising from avoiding all of the uncertainty and transaction costs created by exchange rate volatility. These gains are likely to be greater, the greater is the degree of economic integration between the joining currency and the rest of the membership. This is because closer integration implies (1) a larger share of a country's trade will benefit from exchange rate stability within the currency area; and (2) if labour and capital mobility across the currency union is high, the resultant increase in predictability in investment returns and wage rates will be quantitatively more important. This positive relationship between integration and economic gain is shown by the grey line sloping upwards from left to right in the diagram below.

The *costs* of joining a union involve surrendering the option of using the exchange rate and monetary policy to stabilise the national economy in the event of an asymmetric shock. Once again,

¹³ See chapter 20 in Paul R. Krugman and Maurice Obstfeld, *International economics: theory and policy*, 6th ed. Boston, Addison-Wesley, 2003.

the scale of this shock will be determined by the degree of economic integration involved, only this time the relationship will be an inverse one. To see this, imagine that a (negative) shock hits the currency union that is common to all members. In this case of a *symmetric shock*, the common currency will adjust (depreciate) appropriately. There will also be scope for a common monetary policy response, should one be needed. Now imagine that the shock only hits the new member country. Under this scenario, that of an *asymmetric shock*, since the rest of the currency zone is unaffected, the common currency will not adjust, and the new country will therefore have to get by without the benefits of an exchange rate adjustment or of a monetary policy adjustment. This is likely to impose costs in terms of foregone economic stability (lost output and employment) on the economy. The scale of this loss will be smaller, the greater is the degree of economic integration. That's because closer economic integration implies (1) a smaller relative price adjustment needed to increase the country's amount of trade with the rest of the currency area; and (2) a greater ability for workers and capital to find opportunities in the rest of the currency union. This inverse relationship between integration and cost is shown by the black line sloping downwards from left to right in the diagram below.



The point at which these cost and benefit lines intersect (marked by the dashed line), indicates the minimum level of economic integration required for joining the currency union to make sense. This is because at the point of intersection, losses and gains are equal. To the right of that point, gains from integration exceed losses; to the left, losses are larger.

The standard way in which economists thought about whether in practice those gains were likely to exceed losses is set out in the theory of optimum currency areas (OCAs), which was first developed by Robert Mundell in the early 1960s.¹⁴ For countries to constitute an OCA, Mundell argued that either they should all be subject to similar (symmetric) shocks, such that a common monetary policy

¹⁴ Robert A. Mundell, A theory of optimum currency areas. *American Economic Review* 51 (4) 1961.

and exchange rate adjustment would typically be sufficient. Or, if they were subject to asymmetric shocks, then they should also enjoy high factor mobility: that is, workers and capital should be able to move relatively freely and easily from countries that are doing poorly to countries that are doing well, removing the need for exchange rate adjustment.

Some of the OCA literature then went on to argue that if high factor mobility was not sufficient to offset the effects of a negative shock, it could also be possible for the currency area to deliver institutions that would help make the post-shock adjustment process more bearable. More specifically, the main idea here was that the existence of some version of fiscal federalism would help provide a degree of joint risk insurance in the event of a negative asymmetric shock, by facilitating the transfer of resources from the rest of the currency area to the suffering country.

An OCA competition: Europe v the United States

The plan to move to a European Monetary Union via the adoption of the euro saw many economists turn to the OCA literature as a way of assessing the workability of the scheme. Since this literature did not provide any absolute guide as to what constituted an OCA, the most common approach was to benchmark Europe against an already functioning continental currency area in the form of the United States. Thus economists compared the two across the various criteria outlined above – their relative degree of exposure to asymmetric shocks, relative degree of factor mobility, and the scope for fiscal federalism.

On all three counts, they tended to find that the putative Eurozone did not measure up to the United States:

- European economies seemed to be more exposed to asymmetric shocks than were US states;¹⁵
- European economies demonstrated a much lower degree of labour mobility than did US states;¹⁶
- and US fiscal federalism was far more extensive than anything on offer in Europe.¹⁷

These findings, along with the significant differences in the levels of development, productivity performance, institutions and overall economic structures across the prospective membership produced a degree of pessimism amongst many (particularly US) economists regarding the prospects for what would become the Eurozone: it seemed probable that member economies would be subject to significant asymmetric shocks, that labour mobility was likely to provide only a very

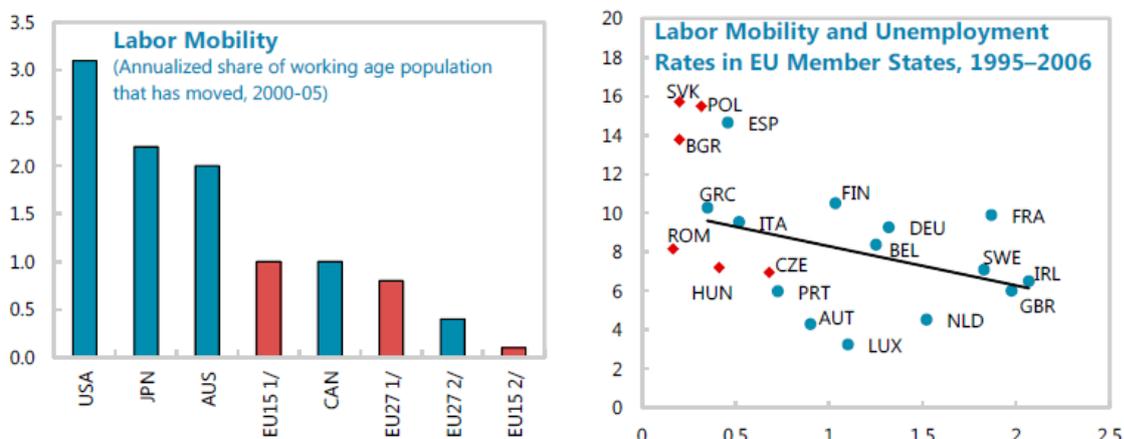
¹⁵ For example, Barry Eichengreen, *Is Europe an optimum currency area?* NBER Working Paper No. 3579. Cambridge MA, National Bureau of Economic Research, 1991; and Maurice Obstfeld, *Europe's gamble. Brookings Papers on Economic Activity* 28 (2) 1997.

¹⁶ Eichengreen, *Is Europe an optimum currency area?* And Olivier Jean Blanchard and Lawrence F Katz, *Regional evolutions. Brookings Papers on Economic Activity* 23 (1) 1992.

¹⁷ Xavier Sala-i-Martin and Jeffrey Sachs, *Fiscal federalism and optimum currency areas: Evidence for Europe from the United States.* NBER Working Paper No. 3855. Cambridge MA, National Bureau of Economic Research, October, 1991.

limited offset, and that there wouldn't be the kind of fiscal (risk-sharing) institutions present to compensate that were found in an established currency area like the United States:¹⁸

Figure 1. Labor Mobility in the Euro Area Is Low

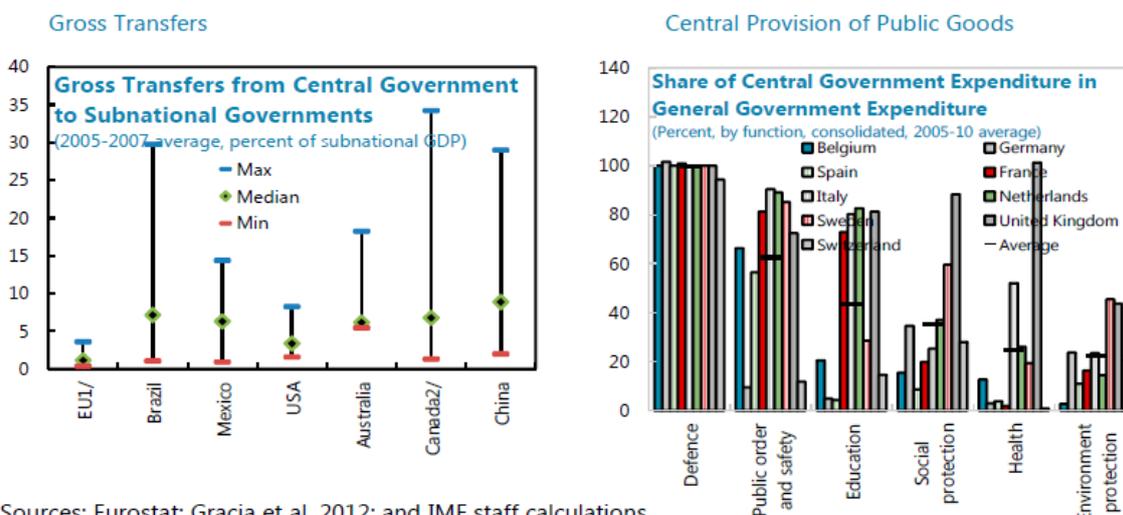


Sources: WEO; European Commission; Bonin et al. 2008; and Staff estimates.

1/ Mobility within countries.

2/ Mobility between countries.

Figure 5. Elements of Fiscal Integration



Sources: Eurostat; Gracia et al, 2012; and IMF staff calculations.

Note: Excludes tax sharing arrangements.

1/ For EU, spending of EU budget, data for 2008.

2/ Excludes region of Nunavut which receives 77 percent of GDP in gross transfers.

Source: International Monetary Fund (IMF), *Euro Area policies: 2012 Article IV Consultation - Selected Issues Paper*. (2012)

¹⁸ Unlike the Eurozone, Federations such as Australia, Brazil, Canada and the United States offer substantial fiscal risk-sharing: estimates suggest that on average, about 10-20 per cent of regional income shocks are absorbed through these arrangements. See Box 3 in International Monetary Fund (IMF), *Euro Area policies: 2012 Article IV Consultation*. IMF Country Report 12/181. Washington DC, International Monetary Fund, July, 2012.

Despite that pessimism, of course, the euro was launched successfully, subsequently passed its ten-year anniversary, and even began to be viewed as a credible challenger to the US dollar's status as global reserve currency.¹⁹

This sense of euro-optimism was on display in a review of that earlier debate by two European economists, which on the tenth anniversary of the euro looked back at those negative assessments and found it 'somewhat surprising that US economists, living in a large monetary union and enjoying the benefits from monetary integration, were (and still remain) critical towards the euro.'²⁰ The two authors argued that the problem with the bulk of those earlier, pessimistic assessments was an over-reliance on the 'static' framework of OCA theory, and a consequent neglect of the possibility that monetary union could be seen as a dynamic or evolutionary process, with the 'fit' of countries into the union improving over time. That is, that the very membership of the Union would eventually deliver both the convergence and the institutions required to make it work.²¹ After all, the United States itself didn't spring into being with all of its current attributes, but rather saw them develop over time. The Eurozone could be following a similar trajectory.

Alternatively, perhaps the pessimists had just got their timing wrong.

The Eurozone's big bets

With the preceding analysis in mind, it's possible to see the ultimate success of the Eurozone experiment as conditional upon a series of big bets on economics and politics.

Start with the *economic* bets. First and most obviously, there was a bet that, despite the member countries likely failing to meet the OCA criteria at the time of the euro's launch, the Eurozone would nevertheless survive long enough to develop the degree of economic convergence required to make it sustainable.²² This punt was then tied inextricably to the bet that the only institutions needed to sustain the Eurozone in the short term were the ECB, the SGP and Articles 123 and 125 of the Maastricht Treaty, with their provisions against monetary financing and bailouts. Other supporting institutions could be expected to develop over time. And implicit here was a third economic bet: that the no-bailout clause in particular would impose a degree of market discipline on member economies, with financial markets able to distinguish between Eurozone members running 'good' and 'bad' policies and adjust the rates at which they were willing to lend accordingly, and so reduce the need for central policy oversight and control.

Next there were the *political* bets. Perhaps the biggest bet here was that there was no automatic need to map currency borders onto political borders, such that deep economic integration in terms of monetary policy and the single market would be compatible with national sovereignty over nearly all other economic decisions. Backing this overarching political bet was a second gamble: that the delivery of successful economic integration would help foster a deepening sense of European

¹⁹ Jeffrey Frankel and Menzie Chinn, Will the euro eventually surpass the dollar as leading international reserve currency?, in *G7 current account imbalances: Sustainability and adjustment*, ed. Richard Clarida. Chicago and London, University of Chicago Press, 2007.

²⁰ Lars Jonung and Eoin Drea, *The euro: it can't happen, it's a bad idea, it won't last. US economists on the EMU, 1989-2002*. European Economy - Economic Papers Number 395. Brussels, Directorate General Economic and Monetary Affairs, European Commission, 2009.

²¹ In other words, perhaps currency unions are not exogenously given, but are endogenous.

²² That is, the bet was that currency unions were formed endogenously.

political identity, and that this in turn would both facilitate the development of the kinds of institutions required to win the economic bet in the long run while providing the political backing that would be needed to sustain the Eurozone in the event of a crisis *en route*.

Then there was one last bet. This was a bet about *irreversibility*. The Maastricht Treaty came with no exit option for the euro. Indeed, exiting the Eurozone, intentionally or otherwise, was designed to be incredibly painful, since it would likely trigger a wave of banking and sovereign crises in the departing country.²³ Yet – aside from an inflation-obsessed ECB and the dubious benefits of the anyway rapidly undermined SGP – the Eurozone came with virtually none of the institutions that might have been designed to make life inside more comfortable in the event of a crisis or even during prolonged hard times. There was to be no significant fiscal and financial risk-sharing in the form of a sizeable federal budget and no Eurozone-wide bank support mechanisms, for example. The implicit gamble here was that making exit an incredibly painful option was sufficient, and it wouldn't be necessary to provide any additional institutions up front. In other words, it was a bet that, no matter how bad things got inside the Eurozone, staying in would always be preferable to leaving.²⁴

All together, that constitutes a series of very big and very important bets. The long-term sustainability of the Eurozone rested on at least most of them paying off.

The economic bet: divergence, not convergence

Unfortunately, the bad news on the economic front is that, if anything, the Eurozone appears to have delivered divergence rather than convergence.

As a recent IMF paper points out, when viewed from a long-term perspective, Eurozone growth has fallen behind its best-performing peers.²⁵ True, from 1960, Eurozone GDP per person of working age did converge rapidly towards the US level and overtake the UK. But starting in the early 1980s, this and other similar measures lost ground relative to both economies.

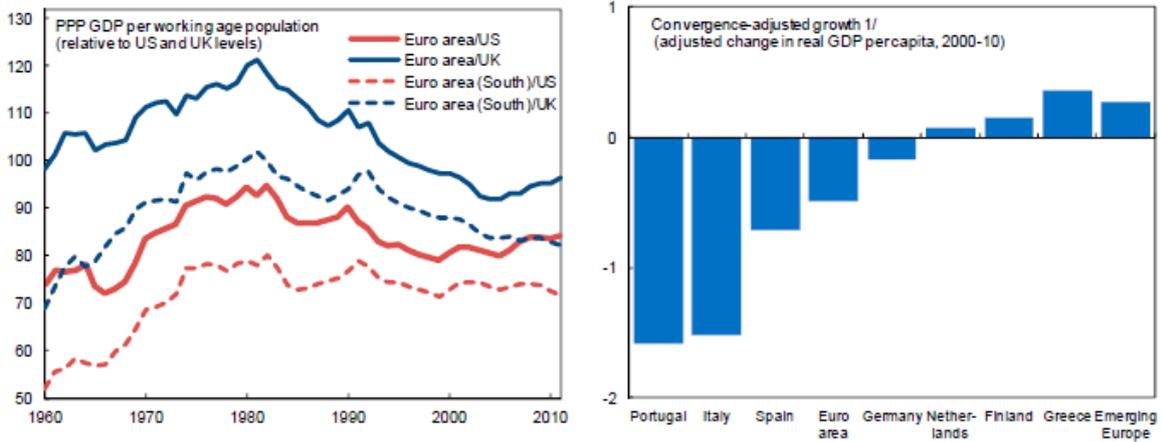
Perhaps more importantly, *within* the Eurozone the early convergence of GDP per person in the Southern countries (Greece, Italy, Portugal and Spain) to the richer Northern economies also stalled: IMF work finds that over the past decade almost all Southern Eurozone economies have expanded by much less than what convergence based on their income differences would have predicted:

²³ Barry Eichengreen, *The breakup of the euro area*, in *Europe and the euro*, ed. Alberto Alesina and Francesco Giavazzi. Chicago and London, University of Chicago Press, 2010.

²⁴ There was another important joint economic and political bet going on here as well: that the exit of any one country would not be ruinous for the Eurozone as a whole.

²⁵ Bergljot Barkbu, Jesmin Rahman and Rodrigo Valdes, *Fostering growth in Europe Now*. IMF Staff Discussion Notes SDN/12/07. Washington DC, International Monetary Fund, 2012.

Figure 1. Growth Divergences

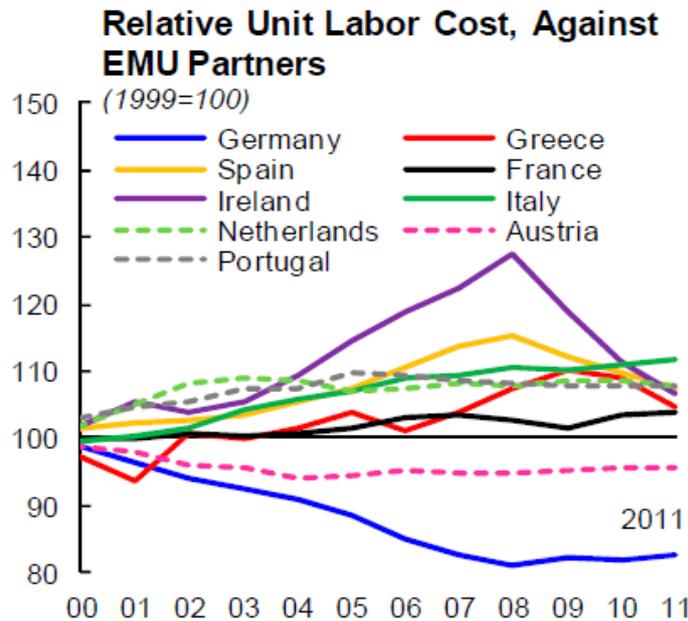


Sources: April 2012 WEO; October 2011 Europe REO; and OECD.

1/The adjusted growth measures the difference between each country's actual growth rate and the growth rate that could be expected given initial income levels.

Source: Barkbu, Rahman and Valdes, *Fostering growth in Europe Now*. (2012)

Importantly, this gap in growth performance between Southern and Northern Eurozone members – or between the Eurozone periphery and the Eurozone core – was matched and exacerbated by big differences in trends in relative competitiveness, as captured by movements in member countries' real exchange rates:



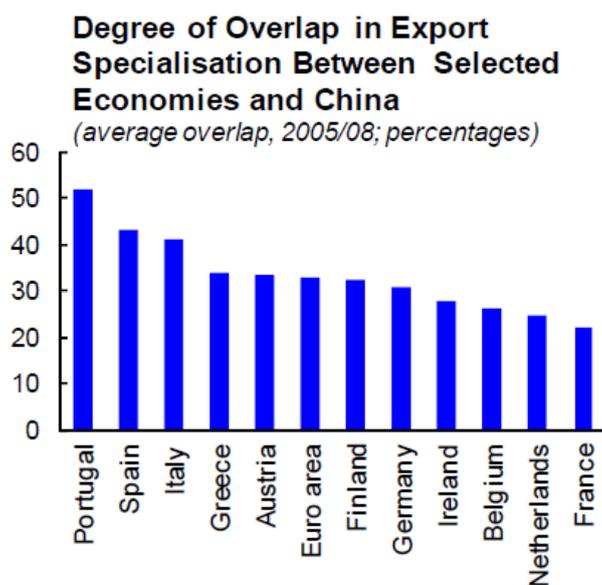
Source: European Commission.

Source: International Monetary Fund (IMF), *Euro Area Imbalances. Annex to Umbrella Report*. (2012)

Inflation rates in the periphery tended to exceed those in the core, while the gap in productivity between the two parts of the Eurozone remained substantial. Unit labour costs rose in the periphery at the same time as wage moderation saw Germany experience a significant fall in its

relative unit labour costs.²⁶ German unit labour costs may have become as much as 25 per cent more competitive than those of Greece and perhaps 33 per cent more competitive than Italy's.

The divergence in underlying competitiveness was further exacerbated by the way in which Eurozone members have been subject to asymmetric shocks in the form of the Eurozone periphery's relatively greater exposure to increased trade competition from China and other emerging markets:²⁷



Source: Mauro, Forster, and Lima (2010).

Source: International Monetary Fund (IMF), *Euro Area Imbalances. Annex to Umbrella Report*. (2012)

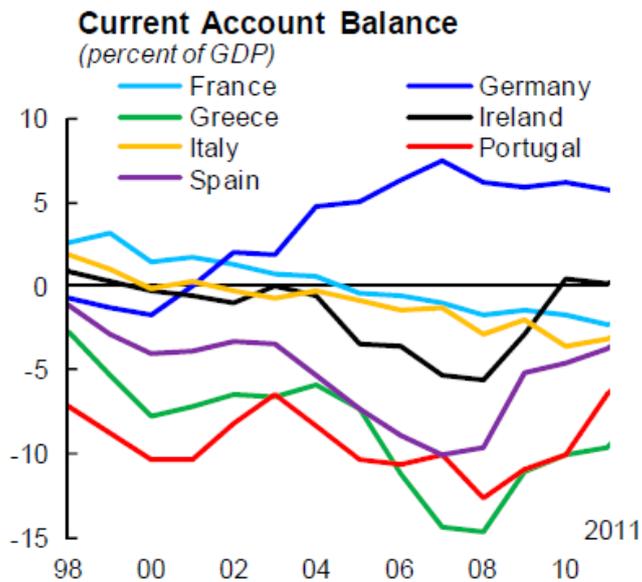
These diverging trends were in turn reflected in significant divergences in members' current account positions, as large current account deficits appeared across much of the Eurozone periphery in contrast to a substantial current account surplus in Germany.

Of course, a pattern of current account deficits and surpluses across the Eurozone *per se* need not have been an indicator of future problems: it might simply have reflected stronger growth prospects, and hence higher rates of return and higher investment rates, in the periphery, and hence been a rational relocation of capital. However, the observed divergence in underlying competitiveness does suggest that policy divergence and asymmetric shocks were a significant problem for the Eurozone in practice. And the subsequent experience of capital account reversals also suggests that this was an important source of vulnerability, albeit with the benefit of hindsight in this case.²⁸

²⁶ International Monetary Fund (IMF), *Euro Area Imbalances. Annex to Umbrella Report*. Towards Lasting Stability and Growth: Umbrella Report for G-20 Mutual Assessment Process. Washington DC, International Monetary Fund, 2012.

²⁷ In contrast, Germany benefitted from the emergence of dynamic new markets for its capital exports. Ibid.

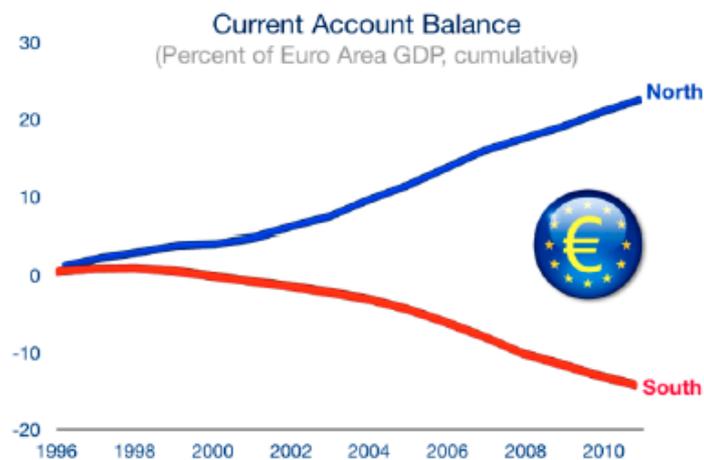
²⁸ That and the experience of a series of emerging markets.



Source: IMF, *World Economic Outlook*.

Source: International Monetary Fund (IMF), *Euro Area Imbalances. Annex to Umbrella Report*. (2012)

In the period since the euro was launched, individual member economies have seen big increases in current account deficits and surpluses, with cumulated deficits of nearly 20 per cent of GDP in the periphery matched by cumulative surpluses of more than 20 per cent of GDP in the Eurozone core:



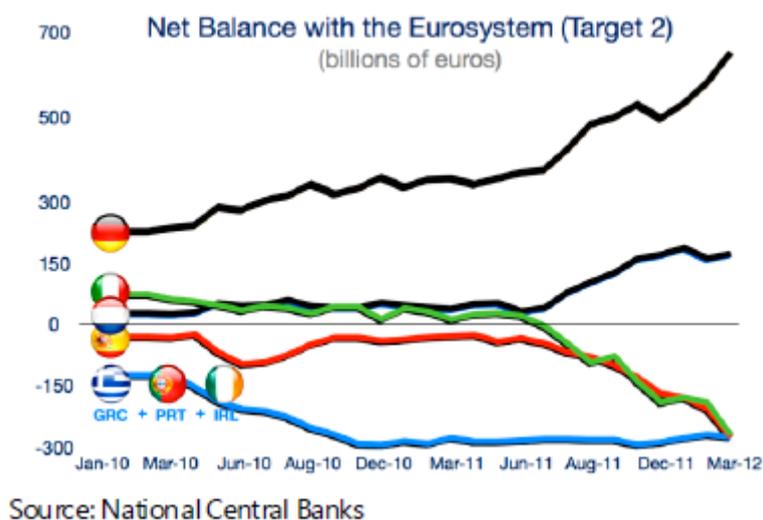
Sources: IMF, *World Economic Outlook* database; and IMF staff calculations

Source: International Monetary Fund (IMF), *Euro Area policies: 2012 Article IV Consultation*. (2012)

Initially, the resulting deficits in the periphery were financed by private capital flowing in from the core. But in 2008 this financial integration came to a juddering halt, and capital started to flow back out of the periphery and into the core or out of the Eurozone altogether. This fleeing (fled) private sector financing has since been replaced by public sector funding, in part through ECB support and through a series of EU-IMF programs.

These developments have shown up in the Eurozone’s payments settlement system, called Target2. Say a newly worried investor wants to pull his money out of a Greek bank and put it into a German one. When the latter is reluctant to accept a new claim on the Greek bank as payment, then the transaction can instead be settled via the Eurozone’s central banks, such that the Bank of Greece lends to its Greek bank funded with matching liability to the Bundesbank, which gets a corresponding claim on the Bank of Greece. All of these net claims across the Eurozone are then aggregated in the Target2 settlement mechanism at the ECB.

The crisis has produced a dramatic widening in Target2 balances between the currency union’s central banks, reflecting the big changes in capital flows and in banking sector deposits:



Source: International Monetary Fund (IMF), *Euro Area policies: 2012 Article IV Consultation*. (2012)

Of course, a standard part of the solution to the kind of growth and competitiveness problems faced by the Eurozone periphery is to shift relative prices in order to make exports and import-competing goods cheaper, and imports more expensive. That requires a shift in the country’s real exchange rate.²⁹ For a country outside a currency union, the traditional way to do this would be through a depreciation of the nominal exchange rate. Inside the Eurozone, of course, this adjustment has to be achieved directly through changes in wages and prices.

Missing institutions are still missing

There’s also been little sign of development of the kinds of institutions that could have helped mitigate some of the consequences of these trends. Most currency unions also involve significant elements of risk-sharing. This can take the form of banking unions with central oversight of regulation and supervision in return for deposit guarantees and resolution schemes, or fiscal unions with centre-regional transfers and provision of public goods.

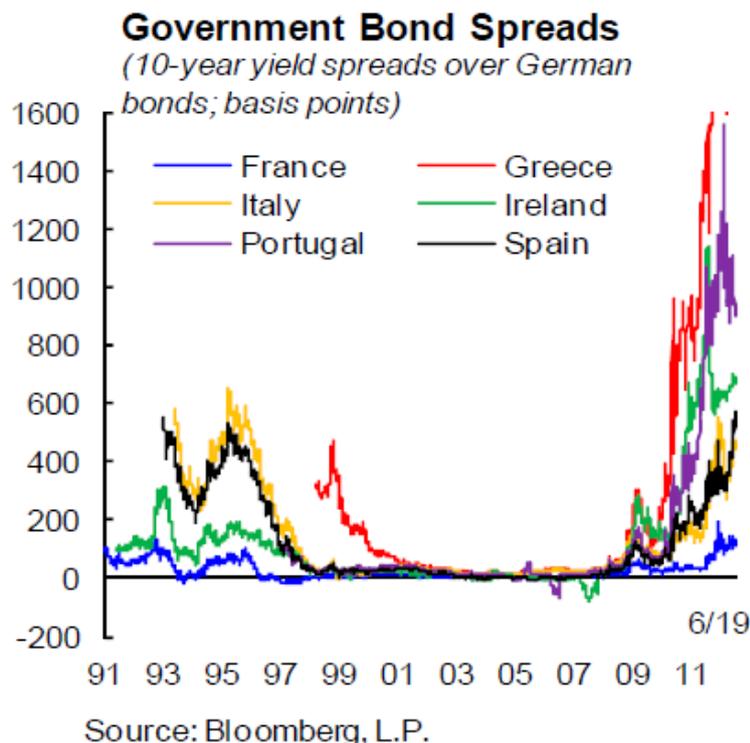
²⁹ The *nominal* exchange rate between two countries is the price of one currency quoted in terms of another – for example, the price of an Australian dollar in US dollars and cents. The *real* exchange rate measures the value of one country’s goods against those of the other. The real exchange rate is the product of the nominal exchange rate and the ratio of prices between the two countries. As such, changes in the real exchange rate can be driven by changes in the nominal rate and by changes in relative prices – driven by changes in relative inflation rates.

The early OCA debate discussed above spent a lot of time on the potential role of a federal fiscal policy, noting that a currency union like the United States has a risk-sharing mechanism in the form of the federal budget that can partly absorb shocks. Yet while the US federal budget is about one-quarter of US GDP, the EU's budget is equivalent to just a little over 1% of the EU's gross national income.³⁰ US federal taxes collected from the states range from 12 to 20 per cent of state GDP, while federal transfers received by states range from nine to 31 per cent of state GDP. By way of comparison, most EU members contribute less than one per cent of their GDP to the common budget, and receive EU funds amounting to between 0.5 – 3.5 per cent of GDP.³¹

Moreover, by the eve of the crisis other potentially important Eurozone-wide institutions – a crisis-management body, European-wide bank supervision, regulation and deposit insurance, full Eurobonds – were still absent.

Don't bet on the markets

Yet another economic bet that failed to pay off was the belief that financial markets would be able to distinguish between, and hence discipline, different Eurozone members. Yet in reality, what happened was that shortly after the establishment of the monetary union, markets in effect stopped distinguishing between sovereign risk, as the spreads on Eurozone sovereign bonds over German bonds virtually disappeared . . . at least until the onset of the current crisis:



Source: International Monetary Fund (IMF), *Euro Area Imbalances. Annex to Umbrella Report.* (2012)

³⁰ Irene Kyriakopoulos, Economic and Monetary Union governance: A post-crisis assessment. *World Economics* 12 (4) 2011. The Eurozone is, of course, a subset of the EU.

³¹ Esther Perez Ruiz, Strengthening governance in the Euro area, in *Euro Area Policies: Selected Issues*, ed. IMF. Washington DC, International Monetary Fund, 2011.

To some extent, this can be seen as a testament to the strength of the credibility effect discussed above: financial markets discounted the probability of any exchange rate risk. But they also seem to have discounted credit risk as well. So, either markets mistakenly decided that there was no difference in creditworthiness across the Eurozone (despite plenty of evidence to the contrary), or they decided that the no-bailout clause in the Treaty was a sham.³² Either way, the bet on market-imposed discipline clearly failed to pay off.

The economic story is even more problematic

Moreover, it wasn't just that the economic bets failed to pay off. What's worse is that the anyway pessimistic OCA literature actually turned out to *underestimate* some of the challenges facing the Eurozone.

Start for example with the gamble that membership in the Eurozone would deliver economic convergence over time. Not only did this convergence fairy fail to turn up, but it is likely that the workings of the single currency actually served to deliver divergence between the periphery and the core.³³ To see this, look for example at the case of Spain.³⁴ Once the euro was in place, Spanish inflation continued to run at a faster rate than inflation in the Eurozone core. As already noted, this produced a decline in Spain's relative competitiveness (an appreciation of the real exchange rate) and a rise in the trade deficit. If Spain had been outside the Eurozone, then it's possible a Spanish central bank might have tightened national monetary policy and brought inflation back under control. Alternatively, a widening external deficit might have seen the currency markets bid down Spain's exchange rate and so help offset the loss of competitiveness. Inside the Eurozone, neither option was on offer. Instead, with Spain's policy rate set by the ECB for the Eurozone as a whole, the fact that Spain was running higher inflation than the rest of the zone meant that real interest rates (nominal interest rates adjusted for inflation) in Spain turned out to be *lower* than in the low-inflation core, rather than higher as policy should have required. This further fuelled the boom in Spain's economy, boosting asset prices and increasing the degree of economic divergence. Large-scale capital inflows from the Eurozone core added to the process.

True, the Spanish authorities could still have turned to fiscal policy or macro-prudential tools to cool the economy. But arguably here, too, the workings of the currency union acted against this: high growth, rising asset prices and low real interest rates all made Spain's cyclical budget position look pretty good without any remedial action, while the disappearance of country risk premia noted above apparently signaled that financial markets were quite comfortable with the overall policy mix.

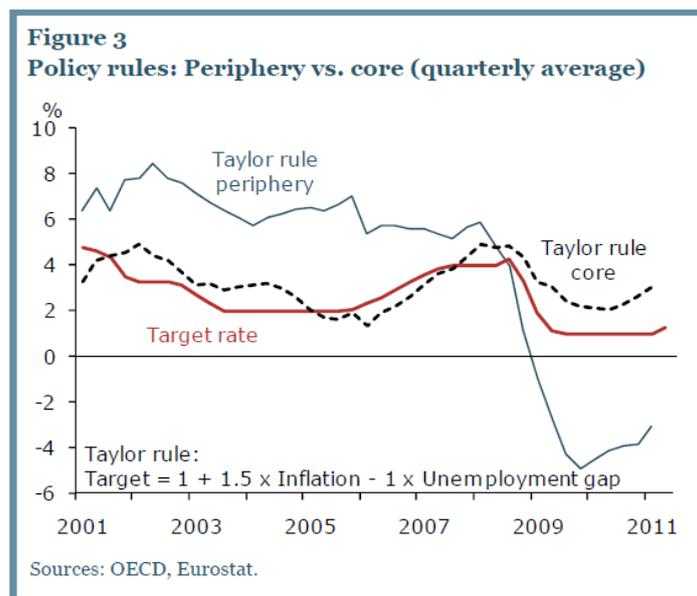
Moreover, the Eurozone's 'one-size-doesn't-fit-all' monetary policy exacerbated both the boom in the periphery and then the subsequent slump, as policy rates that were too low for an overheating periphery before the crisis became too high once the slump hit. This can be seen in calculations of

³² If they did believe the latter, they have been proven correct - there have been bailouts for the Eurozone periphery.

³³ A relative of Paul Krugman's confidence fairy. Indeed, as European policymakers also appeared to be some of the strongest believers in the confidence fairy, one (cruel) way to characterise Eurozone policy might be as one that is based on belief in fairies.

³⁴ Gilles Saint-Paul, *Is the euro a failure?*, VoxEU.org, 5 May, 2010.

the Taylor rule produced by the San Francisco Federal Reserve.³⁵ While Taylor rule recommendations for the Eurozone’s policy rate have done a fair job at tracking the ECB’s actual target rate, things look very different if a separate Taylor rule is constructed for the Eurozone core and periphery. Those measures show that before the onset of the Eurozone crisis, the ECB target rate lay below the level predicted by the rule for the Eurozone periphery, while after the crisis it was significantly above it. The reverse situation applied in the core economies:



Source: Nechio, *Monetary policy when one size does not fit all*. (2011)

Turning the Eurozone periphery into emerging markets

The problems entailed by adopting a one-size-doesn't-fit-all policy in the face of asymmetric shocks (divergent trends in external competitiveness, the flow of capital into the Eurozone periphery, the sudden reversal of that same flow) were always a feature of the OCA debate. What has made matters worse is that it turns out that the OCA debate missed some critically important features about life in a monetary union. In particular, it neglected the consequences of monetary union for the nature of Eurozone sovereign debt, and it underestimated the critical importance of a Eurozone banking union to accompany the more usually discussed (actual) monetary and (prospective) fiscal unions.

Start with the sovereign debt problem. Paul De Grauwe has emphasised the important point that joining European Monetary Union has produced a fundamental transformation in the nature of members' sovereign debts.³⁶ This is because once these economies joined the Eurozone they surrendered their control over the currency in which their debt was issued. This effectively converted them into the equivalent of emerging market economies who have to conduct most of their borrowing in a currency other than their own – a condition that has been described as suffering

³⁵ Fernanda Nechio, *Monetary policy when one size does not fit all*. FRBSF Economic Letter 2011-18. San Francisco, Federal Reserve Bank of San Francisco, 13 June, 2011. The Taylor rule is a policy guideline that indicates a level for the central bank's interest rate policy based on measures of inflation and unemployment.

³⁶ Paul De Grauwe, *The governance of a fragile eurozone*. CEPS Working Document No. 346. Brussels, Centre for European Policy Studies (CEPS), 2011.

from 'original sin'.³⁷ De Grauwe points out that when a country issues debt in its own currency, it does not have to fret about a liquidity crisis since, in a worst-case scenario, it can rely on its national central bank to act as lender of last resort in order to fund its debt. In the Eurozone, however, a country like Spain or Ireland cannot compel the ECB to act in a similar fashion – indeed, as noted above, Article 123 of the Treaty explicitly prohibits monetary financing.³⁸ This difference creates the probability of multiple equilibria and leaves Eurozone countries at risk from falling into a self-fulfilling bad equilibrium.

To see how that works, think of a sovereign borrower in the Eurozone periphery in the period before the Eurozone crisis broke, one with a sizeable public debt stock but with no pressing debt service challenges. As described above, country risk premia had more or less disappeared, allowing all Eurozone countries to borrow at relatively low interest rates. At low rates (and with reasonable economic growth), debt dynamics look fine (see box on page 25). But now suppose investors start to worry (as they did) that they have mispriced sovereign risk, and as a result start to sell that country's bonds and drive up its borrowing rates. At these new, higher interest rates, debt dynamics will no longer look quite so comforting . . . which might push interest rates up further still. If rates rise far enough, this will trigger first a liquidity problem and eventually, potentially turn a growing liquidity problem into a solvency one. Moreover, this will all be happening very quickly in the event that the capital flows that had been previously been funding government debt came to a 'sudden stop', which is another canonical feature of the emerging market-style crises.³⁹ And, as described above, a sudden stop is just what the periphery experienced from 2008.

At this point, an already grim story gets even worse, since Eurozone membership now imposes constraints on a member country's ability to run counter-cyclical fiscal policies. If a recession hits and budget deficits start to widen, the prospect of increased fiscal deficits might start driving interest rates up and moving the country towards the bad equilibrium. These higher interest rates will themselves make the deficit worse by boosting debt servicing costs. If widening deficits start to frighten lenders and drive up borrowing costs, this limits the country's ability to use fiscal policy to cushion the downturn. Instead, as we have seen across the Eurozone periphery, there will be calls for fiscal austerity to get the government accounts in order. But this in turn risks creating an even deeper recession, which can make the debt dynamics look even worse.

³⁷ The 'original sin' hypothesis was introduced by Eichengreen and Hausmann, who focussed on the situation in which a country is unable to borrow abroad (or borrow long term) in its own currency. Under such circumstances, they argued, financial fragility is unavoidable, since all domestic investments will have either a currency mismatch (projects that generate domestic currency revenues will be funded in foreign currency) or a maturity mismatch (long-term projects will be funded with short-term loans). Barry Eichengreen and Ricardo Hausman, *Exchange rates and financial volatility*. NBER Working Paper No. 7418. Cambridge, MA, National Bureau of Economic Research, November, 1999.

³⁸ The ECB can, however, buy government bonds on the secondary market, and has done so using its Securities Market Program (SMP) introduced in May 2010.

³⁹ See Guillermo Calvo, Capital flows and capital market crises: The simple economics of sudden stops. *Journal of Applied Economics* 1 (1) 1998. One feature of the typical emerging market crisis that hasn't appeared in the case of the Eurozone crisis is a balance of payments crisis. This is because the evaporation in private capital inflows that formed the sudden stop has been replaced by official sector funding in the form of the Eurozone's Target2 balances. See Silvia Merler and Jean Pisani-Ferry, *Sudden stops in the euro area*. Bruegel Policy Contribution Issue 2012/06. Brussels, Bruegel, March, 2012.

The bad banks problem

An already bad story gets worse still, since there is also a close link between sovereign balance sheets and bank balance sheets in the Eurozone.

Many European banks have very large exposures to their national government's debt. One explanation for this is that Eurozone financial market regulation, especially banking regulation, was based on the assumption that in the Eurozone all government debt was risk free (despite the logical incompatibility with Maastricht's no-bailout clause).⁴⁰ Hence Eurozone banks did not have to hold any capital against their sovereign exposure and faced no serious concentration limits on their claims to any one sovereign. At the same time, financial regulation and supervision of banking systems continued to be conducted on a national basis. All of which likely encouraged bank holdings of government bonds and so created a feedback loop between banks and sovereign balance sheets.

To see how this worked, go back to the earlier discussion of a bad equilibrium, where markets have changed their views on the riskiness of a Eurozone member country's debt, and started to drive up interest rates. As rates go up and bond prices fall, that produces a fall in the value of government bonds, including those held on bank balance sheets. This deterioration in the quality of their assets raises fears about bank health. That then drives up bank funding costs, which in turn is reflected in a diminished supply of credit to the rest of the economy. A credit crunch drives down overall economic growth, which further undermines both the budget of the sovereign and the quality of bank loans to the domestic economy. Now there are simultaneous sovereign and banking problems, each exacerbating the other.

If the banks' situation gets bad enough, the government might have to step in, and any associated bailout costs will make the government's budget and debt position even worse. Even before that happens, lenders to the government might start to assume that this will eventually be the case, adjust their estimates of the likely future government budget and debt positions accordingly, and then demand a higher risk premium which will also worsen the government's debt dynamics.

What makes all this even trickier for the Eurozone countries is the discrepancy between the size and operational reach of the region's banks and the size and regulatory reach of member economies. Eurozone banks are comparable in size to US banks, but when it comes to supervision or, even more crucially, the need for bank bailouts, they remain the responsibility of individual economies which are much smaller than the United States or the Eurozone as a whole, implying very large contingent liabilities for individual sovereigns.⁴¹ This can be seen in the cases of Ireland and Spain, both of which ended up delivering large-scale fiscal support to their financial sectors, and both of which suffered a significant increase in the stock of public debt as a result:

⁴⁰ Daniel Gros, The misdiagnosed debt crisis. *Current History* 111 2012.

⁴¹ Jean Pisani-Ferry has described the combination of a strict no-monetary financing rule for the ECB, the presence of bank-sovereign interdependence, and the absence of co-responsibility for Eurozone public debt as the Eurozone's very own version of the impossible trinity. Jean Pisani-Ferry, *The euro crisis and the new impossible trinity*. Bruegel Policy Contribution Issue 2012/01. Brussels, Bruegel, January, 2012.

Financial Sector Support 2008-11
(percent of 2011 GDP)

Belgium	7.0
Ireland	41.2
Germany	12.2
Greece	6.1
Netherlands	14.1
Spain ^{1/}	19.5
United Kingdom	6.8
United States	5.3

Sources: Fiscal Monitor; Spain FSAP;
and IMF staff estimates.

^{1/} Includes actual use of debt
guarantees, asset purchases and capital
support from the FROB as of March
2012 and the ESM/EFSF loan
announced on June 9th.

Source: International Monetary Fund (IMF), *Euro Area policies: 2012 Article IV Consultation - Selected Issues Paper*. (2012)

The contagion problem

In a currency union like the Eurozone, spillover effects and contagion fears are both likely to be large. It follows that once things start to go badly wrong in one country, the same set of weaknesses and feedback loops is likely to be triggered quite quickly in those members that share similar kinds of vulnerabilities.

Debt dynamics

As described above, debt sustainability is now a key issue for many Eurozone governments. This box describes the key drivers of a country's public sector debt burden.

The dynamics of public sector debt (expressed as a ratio to GDP) can be set out in the following equation:

$$\Delta D_t = -PB_t + (R - g) D_{t-1} + SF_t$$

Where ΔD_t is the change in the ratio of public debt to GDP at time t , PB_t is the government's primary (non-interest) balance, R is the nominal interest rate paid on the outstanding debt stock, g is the rate of growth of nominal GDP, D_{t-1} is the outstanding stock of debt that is the legacy of the previous period and SF_t is a stock-flow adjustment that takes into account factors such as valuation changes (if some of the debt is denominated in a foreign currency, for example) or losses/gains from government interventions such as banking sector bailouts.

The intuition behind this equation is that this year's stock of debt is equal to last year's stock of debt, plus or minus any government borrowing/saving, plus interest payments on the existing debt stock, adjusted for growth in GDP, plus any stock-flow adjustments.

From this equation it follows that a country's debt dynamics will be worse:

- The higher is the initial stock of debt;
- The larger is the gap between the interest rate and the nominal growth rate; and
- The larger is the primary deficit.

Note that there are also important interdependencies. In particular, the higher is the initial debt stock, the more sensitive are debt dynamics to shifts in the gap between the interest rate and the growth rate.

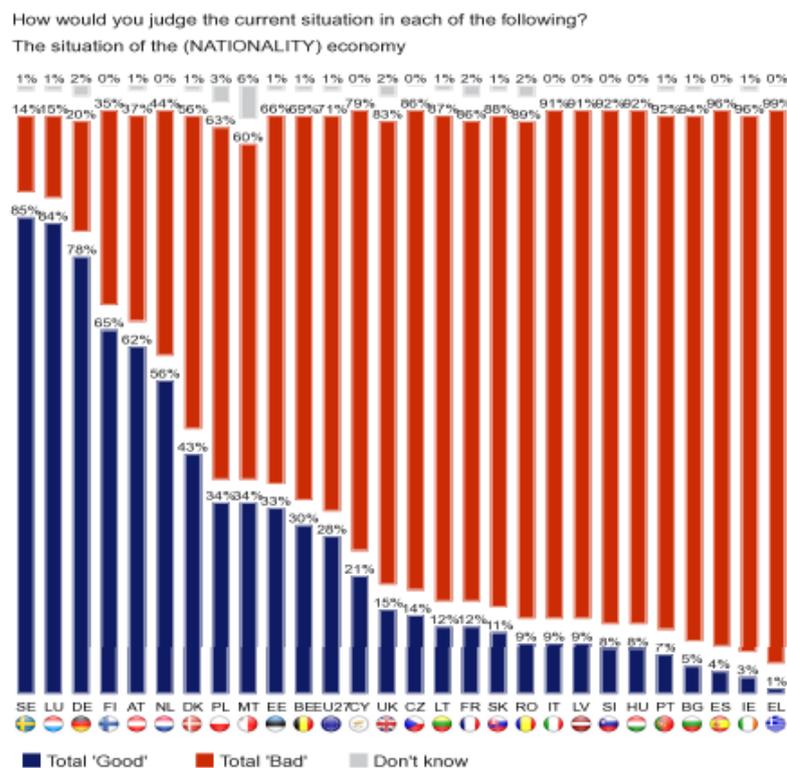
Stock-flow adjustments can play an important role: as noted in the text, in the case of the Eurozone periphery, actions to bailout the banking sector have produced a sharp deterioration in public sector balance sheets.

The above equation implies that solutions to a public sector debt problem will include some combination of:

- The government running large primary surpluses (fiscal austerity);
- A reduction or write-down of the outstanding debt stock;
- A reduction in borrowing costs via lower interest rates; and
- An increase in the rate of economic growth.

Divergence, big time

All of these developments have seen the economic divergence between the Eurozone periphery and core grow even larger, producing vastly different economic outcomes for the currency zone's citizens. So, for example, a poll conducted by Eurobarometer in November 2011 showed that while some 80 per cent of those polled in Germany and Sweden viewed the economic situation of their national economy as good, less than five per cent felt the same way in Greece, Ireland and Spain, and less than 10 per cent in Italy:



Source: Eurobarometer, *Eurobarometer 76: Public opinion in the European Union. First Results.* (2011)

These very different indicators of sentiment reflect very different indicators of growth and employment performance. Without the ability to adjust nominal exchange rates, adjustment in the periphery is coming through the labour market in a particularly painful way: this year, unemployment rates are expected to range from less than six per cent in Germany up to 24 per cent in Spain:



Source: Eurostat

Source: International Monetary Fund (IMF), *Euro Area policies: 2012 Article IV Consultation*. (2012)

The political bet: caught in (another) trilemma

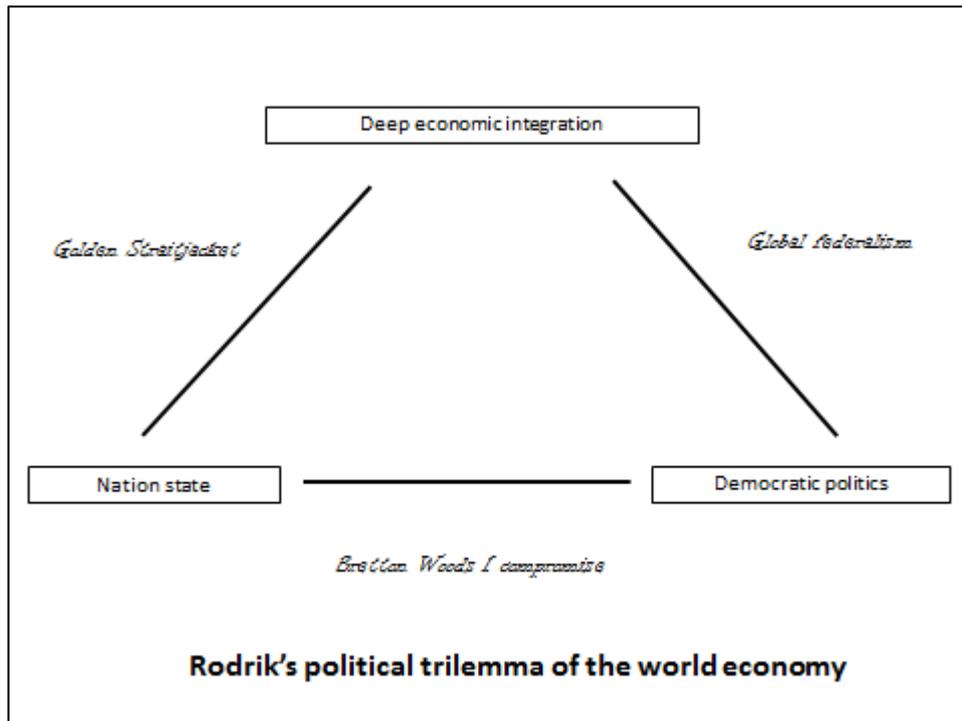
Just as the economic bets have failed to go the Eurozone's way, so have the political ones.

A useful framework to think about this is provided by Dani Rodrik's concept of a political trilemma.⁴² Rodrik's general proposition is that delivering deep economic integration requires the removal of the kinds of transaction costs that arise when transactions cross international borders. Nation states are the big source of these costs – they produce sovereign risk and regulatory discontinuities at the border, they make it difficult to agree on cross-border standards and regulations, and their voters can act as an important break on the ability of policymakers to adopt international rules or conventions. In a parallel with the monetary trilemma outlined above, Rodrik argues therefore that countries can choose a maximum of two out of the following three options:

1. Democratic politics;
2. National sovereignty; and
3. International economic integration.⁴³

⁴² Dani Rodrik, Greek lessons for the world economy. *Project Syndicate*, 11 May 2012. O'Rourke, *A tale of two trilemmas*.

⁴³ Dani Rodrik, How far will international economic integration go? *Journal of Economic Perspectives* 14 (1) 2000.



One potential solution to Rodrik's trilemma is to do away with nation states – 'Global federalism' in the diagram – and align international markets with international politics and global rules and regulations. An alternative approach is to forfeit full economic integration in order to allow space for variation in national policies: in the diagram this is represented by the post-World War II Bretton Woods compromise, which, through the use of capital controls, tried to maintain national markets for capital. A third solution seeks to combine the nation state and full economic integration by donning Thomas Friedman's Golden Straitjacket at the expense of democratic choice, by taking economic policymaking out of the political sphere and handing it over to unelected technocrats (independent central bankers, independent fiscal agencies).⁴⁴

Rodrik initially used this model to think about the future of globalisation, but more recently has applied it to the Eurozone crisis, as has Kevin O'Rourke.⁴⁵ Rodrik's main point is that the Eurozone's political problem is that the current crisis hit in mid-transition: the area was in the process of moving from the nation state to federal (Eurozone-wide) decision-making, but hadn't got far enough. That leaves Eurozone leaders having to choose whether to accelerate the shift to federalism, or alternatively to retreat to one of the other two solutions to the trilemma, either by abandoning the quest for deeper economic integration, or by restricting democracy. Similarly, O'Rourke argues that the Eurozone offered only a fudged solution to Rodrik's political trilemma. The Eurozone combined deep economic integration with only limited Eurozone-level institutions (an ECB but no financial or fiscal union, remember). These limited European institutions had to operate alongside national decision-making bodies which retained responsibility for the bulk of policy decisions and which also remained subject to a national democratic constraint. The resultant compromise delivered a

⁴⁴ The idea of the Golden Straitjacket is introduced in Thomas L Friedman, *The Lexus and the olive tree*. London, HarperCollins, 1999.

⁴⁵ Rodrik, Greek lessons for the world economy. O'Rourke, *A tale of two trilemmas*.

monetary union with serious design flaws, as the persistence of national decision-making and national politics ruled out a transition to a full fiscal and financial union.

The political trilemma suggests that the big political bet – that deep economic integration could co-exist with national and democratic sovereignty over most decisions – was fundamentally flawed. It also suggests that the gamble that economic integration would, on its own, deliver the kind of political integration required to sustain the Eurozone was similarly misguided.

No surprise: austerity is bad for political stability

Instead, the current reality seems closer to the reverse: the prevailing economic crisis conditions are working to *undermine* political solidarity, with adjustment fatigue amongst voters in the Eurozone periphery and bailout fatigue on the part of voters in the core, particularly in Germany.

That economic crises are bad for political projects is not a surprise. There is evidence that the aftermath of financial crises are marked by both an increase in economic polarisation (inequality) and an increase in political polarisation, with the latter more likely to produce gridlock and disagreement than to encourage any renewed drive to find a (federal) solution.⁴⁶ Likewise, there seems to be little doubt that the imposition of a policy response that has significantly overweighted fiscal austerity has contributed to political instability. Certainly, the historical record suggests both the existence of links between weak growth and political extremism and the risk that budget cuts will trigger political and social unrest.⁴⁷ Voters across the periphery have correctly deduced that the policy package that has been on offer has turned out not to be fit for the purpose.⁴⁸ Austerity in the midst of a major downturn doesn't deliver a swift return to fiscal sustainability. What it does deliver is political instability: by early May this year, 10 out of 17 Eurozone governments had been kicked out of office in little more than a year (Ireland, Finland, Portugal, Spain, Italy, Greece, Slovakia, Slovenia, Holland and France all saw changes in government starting from February 2011).⁴⁹

As a result, what was anyway a fragile consensus supporting austerity in the periphery and bailouts in the core has eroded, with the damage to the traditional political parties associated with this prescription encouraging the rise of anti-establishment sentiment, empowering new political actors such as the Five-Star movement in Italy, Syriza in Greece and the Pirate party in Germany.⁵⁰

One interpretation of this trend is that fiscal and structural adjustments may now be producing an equivalent political adjustment, with the new political arrangements comprising rapid changes in voter allegiances to parties, leaders and policies.⁵¹ If that interpretation is correct, then it does not

⁴⁶ Atif R Mian, Amir Sufi and Francesco Trebbi, *Resolving debt overhang: Political constraints in the aftermath of financial crises*. NBER Working Paper No. 17831. Cambridge, MA, National Bureau of Economic Research, February, 2012.

⁴⁷ Markus Bruckner and Hans P Gruner, *Economic growth and the rise of political extremism: Theory and evidence*. CEPR Discussion Paper 7723. London, Centre for Economic Policy Research, March, 2010. Jacopo Ponticelli and Hans-Joachim Voth, *Austerity and anarchy: Budget cuts and social unrest in Europe, 1919-2010*. CEPR Discussion Paper 8513. London, Centre for Economic Policy Research, August, 2011.

⁴⁸ Charles Wyplosz, *The impossible hope of an end to austerity*. VoxEU.org, 14 May, 2012.

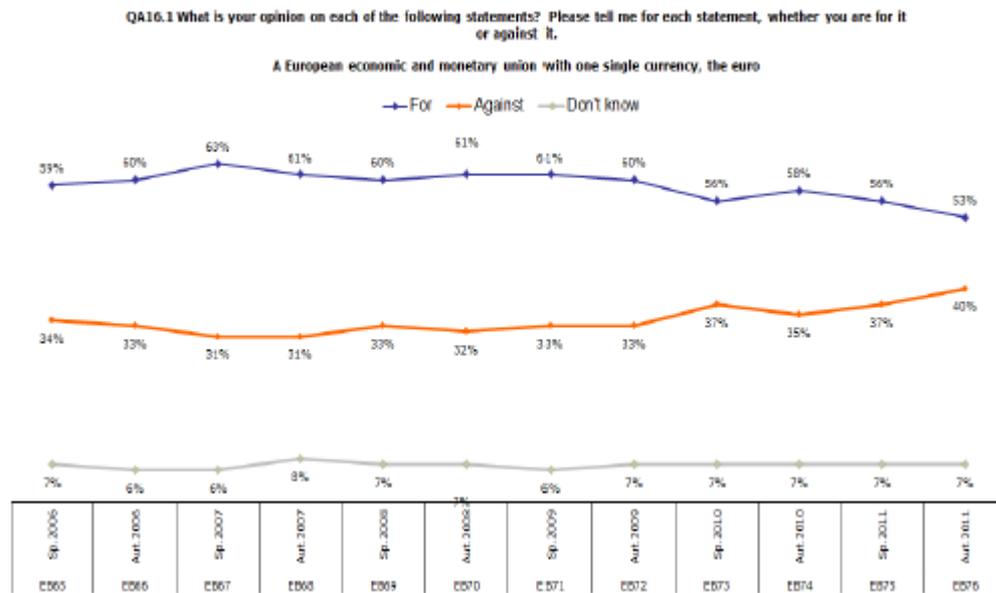
⁴⁹ Ian Traynor, Debt and currency crisis punish Europe's leaders. *The Guardian*, 7 May 2012.

⁵⁰ Francesco Daveri, *Weekend elections: Democracy and the fiscal compact*. VoxEU.org, 8 May, 2012

⁵¹ Tina M Fordham, Willem Buiter and Jonathan Stubbs, *The new eurozone political geometry: What economic and market implications?* Global political insights, Citi Research, 14 May, 2012.

augur well for the kind of political consensus that will be needed to deliver the kind of reforms that the long-term sustainability of the Eurozone requires.

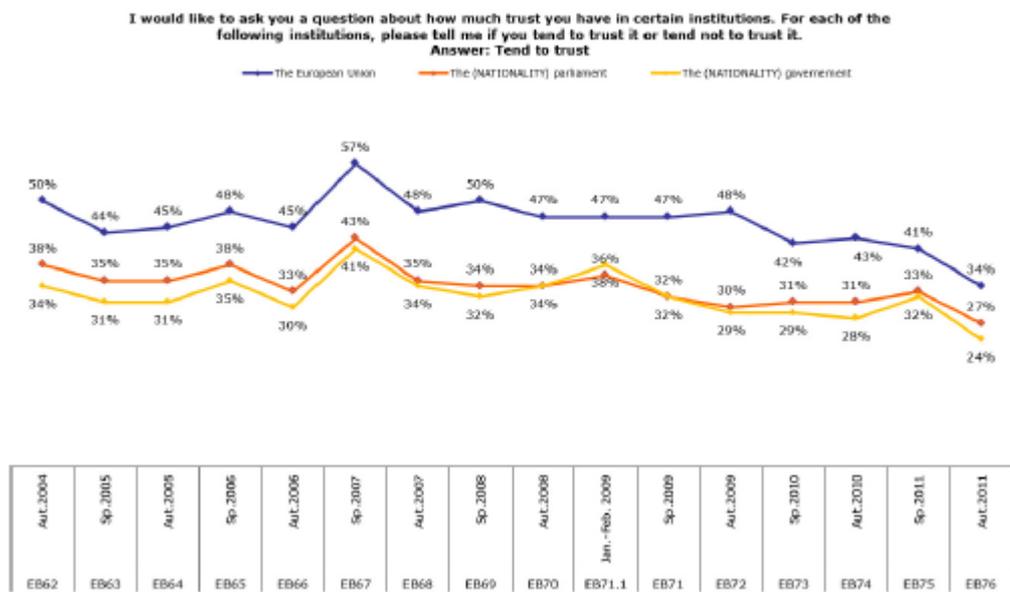
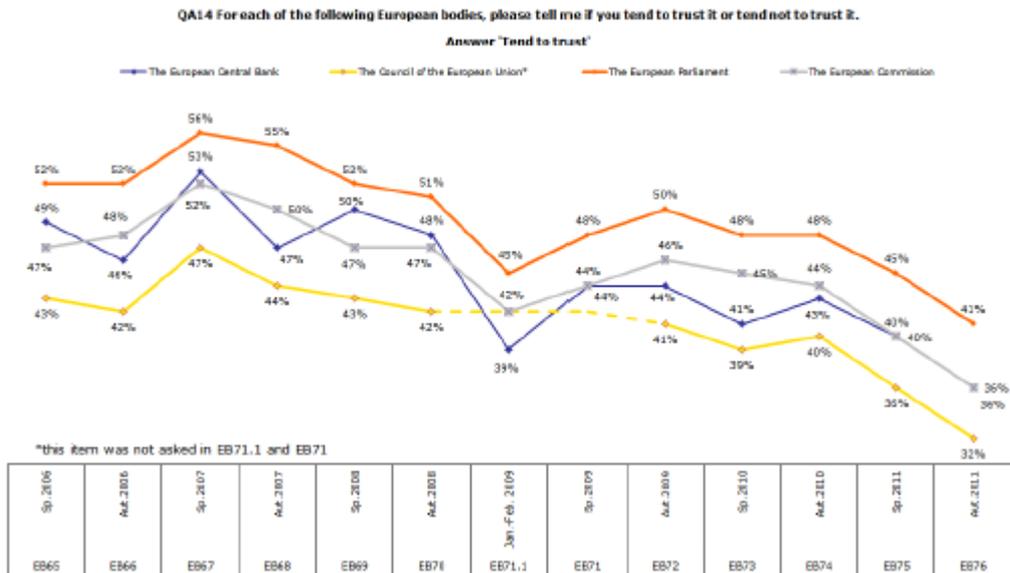
Evidence on this last point is still mixed. Thus, on the one hand, polling still suggests that public support for the euro continues to be significant, with those in favour of the single currency outnumbering those opposed, despite recent signs of erosion in the level of support.⁵²



Source: Eurobarometer, *Eurobarometer 76: Public opinion in the European Union. First Results.* (2011)

On the other hand, however, the current crisis is clearly taking a heavy toll on the general level of public trust in both European and national political institutions. Eurobarometer polling, for example, confirms a decline in the level of public trust accorded to the four main EU institutions (the Parliament, Commission, Council and ECB) alongside more widespread erosion in the level of trust given to political institutions in general – including *national* governments and parliaments:

⁵² The chart is for the EU. In the Eurozone area itself, the support for the euro is even higher, with 64 per cent in favour as opposed to only 29 per cent again.



Source: Eurobarometer, Eurobarometer 76: Public opinion in the European Union. First Results. (2011)

Multiple crises, adverse feedback loops and vicious spirals

To sum up, then, the current Eurozone crisis has brought all of the following elements together:

- Asymmetric shocks in the form of diverging trends in competitiveness and capital inflows and asset price booms followed by sudden stops and busts across the Eurozone periphery;
- A one-size-doesn't-fit-all monetary policy which has exacerbated the divergence in growth and competitiveness between member economies;
- The absence of any effective financial market discrimination regarding country risk;
- Sovereign debt fragility and the presence of multiple equilibria;
- Adverse feedback loops between Eurozone banks and sovereigns;

- Scope for significant and rapid contagion; and
- Growing political strains triggered by austerity fatigue in the periphery and bailout fatigue in the core.

The result has been a set of interconnected crises and feedback loops which have worked to trap the economies of the Eurozone periphery in a vicious spiral.⁵³

The periphery now suffers from a growth and competitiveness problem that it is unable to address using monetary policy or exchange rate adjustment. It also has a sovereign debt problem, which rules out fiscal policy. That leaves the slow, painful grind of a so-called internal devaluation, which seems to imply a prolonged period of weak growth at best, or ongoing recession. This poor growth outlook is bad news for bank and sovereign balance sheets, and bad news for political stability. Likewise, slow growth, sickly banks and political unrest are all negatives for sovereign creditworthiness. Slow growth and indebted sovereigns are also bad news for banking sector health. Unhealthy banks are bad news for growth prospects. And in a currency union, spillover effects and contagion fears are both likely to be large, so once things go wrong in one country, the same set of weaknesses are likely to be triggered quite quickly in those members that share similar kinds of vulnerabilities.

For the Eurozone crisis countries, almost everything is connected, and almost everything is connected in a *bad* way.

The Eurozone's bad bets

A review of the economic and political bets that underpin the Eurozone experiment, then, suggests that most of them have failed to pay off, calling into question the sustainability of the Eurozone in its current form. There is one bet, the one about irreversibility, still standing. Despite all of the current difficulties, no country has left the Eurozone and the single currency is still with us.

As noted above, the Maastricht Treaty always envisioned that entry to the Eurozone would be irreversible.⁵⁴ The Eurozone can be seen as a machine built to maximise the credibility of an exchange rate peg, in large part by making any exit from that peg incredibly costly and painful. Unfortunately, the designers of that machine were not able or willing to equip it with the kind of instruments needed to help countries stay in the Eurozone if they fall into trouble. So, on the one hand, there's all the pain and trauma that an exit would bring to deter leaving. But all there is on the other hand is a recently cobbled together and ultimately still inadequate set of instruments designed to stop the whole thing blowing up.

Exiting the Eurozone is designed to be unthinkable painful and so far that has been enough to hold the whole thing together. That, however, is a dangerous bet to continue to rest the future of the project on, not least since for some countries, staying in *under current conditions* is looking incredibly painful too.

⁵³ Jay C. Shambaugh, *The Euro's three crises*. Brookings Papers on Economic Activity, Spring, 2012. Barry Eichengreen, Europe's vicious spirals. *Project Syndicate*, 11 January 2012.

⁵⁴ Eichengreen, The breakup of the euro area,

Playing games

The nature of the policy response to the crisis has only made things worse: at a recent meeting in Brussels, one interlocutor delivered a pithy summary of that response to date: European policymakers have consistently managed to do not quite enough, not quite in time. Not surprisingly, this has been bad for confidence.

In addition, the current response has until recently tended to focus heavily on just one problem (sovereign indebtedness) to the relative neglect of all the others. To some extent, this seems to represent either a misdiagnosis or a partial diagnosis of what has gone wrong.⁵⁵ But it is also the consequence of the absence of any significant Eurozone-wide consensus on how to deal with the current crisis. This, along with the quite different impact felt by different Eurozone members, has inevitably complicated the policy response. In particular, it has created a division between the Eurozone periphery (joined more recently perhaps by members of the so-called soft core, like France) on the one hand and Germany and other members of the core on the other.

The crisis-hit periphery wants the Eurozone to deliver more (fiscal and financial) support to help it adjust to the crisis and minimise the current austerity process and the consequent political fallout. It wants more money, more growth and less pain. The Eurozone core, on the other hand, does not want to pledge a large amount of additional resources in the absence of suitable and credible guarantees regarding the appropriate policy stance in the crisis economies (basically more structural reform and fiscal adjustment) and is also worried about the moral hazard involved: if it eases the short-term constraints on the periphery, then the latter's commitment to structural reform might well disappear.

One way, then, to think about the current process of policy determination in the Eurozone is as the product of an ongoing game of chicken between both sides, rather than as a simple first-best response to the current set of problems. Each player is hoping that the other blinks first, and playing a dangerous game of brinkmanship. This entails a significant price in terms of the timeliness and effectiveness of the resulting policy outcomes.

It also involves the risk that, if one or both sides miscalculate, everyone ends up going over the brink.

What's been delivered so far? New institutions, new fiscal rules and new policies

While the policy response to date has concentrated on calls for austerity to deliver fiscal sustainability and structural reform to boost growth and competitiveness, there have also been significant developments in the structure of European Monetary Union. Indeed, despite the fact that European policymakers have been consistently (and sometimes disastrously) behind the curve during the current crisis, they have nevertheless managed to deliver an amount of policy change that would have been not just surprising, but arguably unthinkable, a few years ago.

Since 2008, Europe's leaders have managed to deliver a mix of new institutions, new fiscal rules, and new policies.

⁵⁵ Paul De Grauwe, *Fighting the wrong enemy*. VoxEU.org, 19 May, 2010.

New institutions

Thanks to the current crisis, the Eurozone now has an institution tasked with financial stabilisation mechanism. For now, this takes the form of the European Financial Stabilisation Mechanism (EFSM) and the temporary European Financial Stabilisation Fund (EFSF). The EFSF will be succeeded by a permanent European Stability Mechanism (ESM), due to come into operation from the middle of this year. Unfortunately, the general consensus is that the EFSF/ESM does not have close to enough resources on hand to manage both the Eurozone's sovereign debt problems and to recapitalise the currency zone's fragile banking sectors.⁵⁶

In addition, three new European Supervisory Institutions were created with effect from 1 January 2011. These comprise:

- The European Banking Authority (EBA) which replaces the Committee of European Banking Supervisors along with the introduction of the Common Reporting Framework (COREP) with its standardised reporting framework for bank capital requirements.
- The European Securities and Markets Authority (ESMA); and
- The European Insurance and Occupational Pensions Authority (EIOPA).

Finally, the European Systemic Risk Board (ESRB) was established on 16 December 2010 and tasked with conducting macro-prudential oversight of the Eurozone.

New fiscal rules

The crisis has also seen the Eurozone working hard to develop a new fiscal governance structure. This is based around two parallel features: the Six Pack and the Fiscal Compact.⁵⁷

The '**Six Pack**' (it comprises five regulations and one directive, hence the name) entered into force on 13 December 2011. On the fiscal front, it strengthens the old SGP and its requirements that budgets should converge towards a country-specific medium-term objective (MTO), that general government balances should not exceed three per cent of GDP and that public debt should not exceed 60 per cent of GDP. It does this by reinforcing both the preventive and the corrective arm of the SGP, that is, the Excessive Deficit Procedure (EDP), by sharpening up the various definitions and by toughening up the application of financial sanctions.

In addition, the Six Pack goes beyond fiscal policy with the introduction of a new macroeconomic surveillance mechanism, the Macroeconomic Imbalance Procedure (MIP), which is intended to provide early warnings of economic problems and imbalances more broadly.

Then there is the Fiscal Compact, which is the fiscal part of the Treaty on Stability, Coordination and Governance, which was signed on 2 March 2012 and which will enter into force on 1 January 2013, providing that at least 12 Eurozone members have ratified it. The Compact requires Eurozone members to introduce the budgetary requirements of the SGP into national law, preferably in a constitutional format, and also provides for supporting compliance and surveillance measures.

⁵⁶ See for example Adrian Blundell-Wignall, Solving the financial and sovereign debt crisis in Europe. *OECD Journal: Financial Market Trends* 2011 (2) 2012.

⁵⁷ See European Commission web site, section on Economic governance, at http://ec.europa.eu/economy_finance/articles/governance/2012-03-14_six_pack_en.htm

Finally, there is the **'Two Pack'**, which is due to come into force later this year. It provides for EU surveillance of draft budget plans and surveillance of actual budgetary execution.

This policy approach is open to criticism – the big focus on fiscal austerity and a relative reluctance to grapple with the other sources of the crisis – but does indicate some important shifts in the allocation of policy control between nations and the centre, as captured in the political trilemma outlined earlier.

New policies

Although the conservative ECB has been much more cautious than the Federal Reserve and the Bank of England when it comes to the operation of monetary policy over recent years, by its own standards it has been rather radical. Policy measures have included spending hundreds of billions of euros buying up government debt in secondary markets via the Securities Market Program (SMP) after the latter was introduced in May 2010 and deploying almost a trillion euros in the form of its long-term refinancing operations (LTROs).⁵⁸

The June 28-29 Summit

Lastly, the summit meeting held on 28-29 June this year showed Eurozone leaders continuing down their gradual path to greater integration. In particular, the meeting took a couple more steps towards a banking union for the currency area, by recommending that the ECB would assume the central supervisory role for Eurozone credit institutions by the end of this year, and that this transfer in regulatory authority would then permit the ESM to recapitalise banks directly, rather than via government balance sheets as is currently the case. Still, other features of a banking union – a Eurozone-wide deposit guarantee scheme or banking resolution scheme – were not present in the plan.

What's (probably) needed to ensure Eurozone survival?

Although there have been significant policy moves to date, they still leave the Eurozone some distance from the kind of measures more likely to guarantee long-term survival. What would such measures include?

The honest answer to that question is that there is no agreement on the exact mix of institutions and policies that would be required. There is, however, some agreement over the likely *set* of institutions and policies from which that mix would have to be drawn. These include:

- Encouraging the ECB to act as a real lender of last resort for Eurozone governments in order to resolve the bad multiple equilibrium / original sin problem.
- Delivering sustained structural reform across the Eurozone periphery to deliver improved growth and competitiveness.
- A more expansionary policy stance in the countries of the Eurozone core to ease the adjustment process in the periphery.
- Further aggressive management of the Eurozone's large public debt overhang, almost certainly through a new round of write-downs.

⁵⁸ Charles Wyplosz, *The ECB's trillion dollar bet*. VoxEU.org, 13 February, 2012.

- Building a financial or banking union to accompany the current monetary union. Among other things, requiring a Eurozone-wide deposit insurance scheme, along with the Eurozone banking regulatory, supervisory and resolution authorities required to manage the associated moral hazard.
- Providing greater fiscal integration and (hence) fiscal risk-sharing. A Eurobond providing for common sovereign borrowing with joint and several liability would offer several advantages along these lines, including increased risk-sharing and resilience to shocks (since country-specific shocks would have only a limited pass-through to borrowing costs), ease the bank-sovereign feedback loop, and, by offering a deeper market than current national markets, offer a liquidity premium.⁵⁹ Full fiscal federalism would offer an even more complete (but even more politically difficult) solution.

Clearly, different measures apply to different time horizons, and it is possible, for example, to imagine a package of measures that deals with the current crisis followed by another set aimed at securing the longer-term sustainability of the Eurozone. Indeed, seen in this light, these various solutions can be treated as a sort of graduated response to the crisis, starting with those measures needed to deal with the most pressing problems, and continuing on to managing the structural challenges posed by the currency union itself.⁶⁰

So, for example, the most immediate priorities might be judged to be solving the linked sovereign debt and banking sector crises.

As the box on debt dynamics on page 25 sets out, solutions to a sovereign debt problem can involve a set of policies ranging from austerity (run large primary budget surpluses) to debt forgiveness. The approach followed to date has concentrated on austerity plus official sector financial support, including indirectly through the ECB's SMP as well as via the EFSF/ESM. In addition, structural reform is supposed to help lift growth rates and hence improve long-term debt dynamics. Unfortunately, in the short term the impact on growth of this kind of reform is ambiguous at best, and has anyway been swamped by the growth-destroying impact of austerity. In practice, the current approach has now run out of steam, not least because it has run out of political support in those countries where austerity is being applied. Additional policy initiatives that could be taken in the short term would include further debt write-downs across the periphery combined with more funds for the EFSF/ESM and continued support from the ECB.

Meanwhile, on the banking sector crisis the most likely solution would entail a combination of extensive balance sheet repair via recapitalisation from a resource-enhanced ESM with a move to a true banking union to increase risk-sharing. As noted above, the June 2012 summit has taken some steps in this direction, but more are likely to be needed, including Eurozone-wide deposit guarantees and resolution schemes. Such would be conditional on deep central involvement in supervisory and regulatory issues, however, which would imply a profound change in some national sensibilities.

⁵⁹ For a short outline of the case for Eurobonds, see Box 2.6 in International Monetary Fund (IMF), *Global Financial Stability Report: The quest for lasting stability*. World Economic and Financial Surveys. Washington DC, International Monetary Fund, April, 2012. Arguably, EFSF and ESM bonds are already a form of Eurobond.

⁶⁰ As set out rather nicely in the conclusion to Mark Cliffe, *Roads to survival: How EMU breakup could be avoided*. ING Financial Markets Research. London, ING, June, 2012.

In the near term, this sort of policy approach may buy the Eurozone a bit more time. In the longer term, however, monetary union and an evolving banking union are still likely to need supplementing by some form of fiscal union. This could take the more minimalist form of the common issuance of Eurobonds, which would entail informal transfers from the core to the periphery, or a more standard fiscal union which would entail significant formal transfers via spending programs.⁶¹ The policy quid pro quo would have to involve an even greater level of central involvement in fiscal policies than is envisaged by the current nexus of the Six Pack, Two Pack and the Fiscal Compact. The political preconditions for such policy developments would be huge.

Conclusion: four implications of the Eurozone crisis

The key implication of the current crisis is that it is a painful confirmation that the Eurozone is not sustainable in its current form. The series of economic and political bets that were placed back at the start of the euro process have nearly all failed to come off. Today, the main thing that is keeping the whole project from unraveling is that the costs of disintegration are so large they continue to outweigh the nevertheless high and rising costs of muddling along with the current set-up. This is very unlikely to be a sustainable equilibrium, however, given that the political consequences of the current situation are undermining policymakers' ability to live with the status quo.

This suggests two further points.

In the short term, it may still be possible to come up with a set of policy measures that can keep the show on the road for a bit longer: a more generous ECB, more action on debt and bank resolutions including more debt write-downs, and some steps towards greater risk-sharing via a move towards a banking union. Together with the huge vested interest in avoiding a euro collapse, this could be just about enough, and as such, would represent a continuation of the current policy approach. Note, however, that even this shortlist of options will be politically difficult to deliver under current conditions, and at best it only represents what will be required to prevent a collapse in the immediate future.

For the Eurozone to have anything more than an immediate future, it will likely require a radical shift towards deeper fiscal and financial union to accompany monetary union. That in turn will require a solution to the political trilemma in the form of a resolution of the ongoing clash between the current desire to keep national and democratic control over economic policy while simultaneously driving towards ever deeper economic integration. It is true that recent steps taken by Brussels and by European leaders have seen Eurozone members start to move gradually towards greater central control over national policies – by increasing controls over national fiscal policy, by increasing oversight over banking and regulatory policy and so forth. But these steps are still an awfully long way from the kind of institutions that will be needed to deliver a fully viable monetary union. More fiscal risk-sharing, whether through Eurobonds or greater fiscal federalism and a larger EU budget, will require much greater oversight of national fiscal policies, while more financial risk-sharing will have parallel requirements in terms of oversight of national regulation and supervision. Right now,

⁶¹ The former would involve implicit transfers as AAA-rated Eurozone sovereigns would likely see their borrowing costs go up with common Eurobonds, even as lower-rated borrowers benefit from access to cheaper funding.

it is far from clear that there exists sufficient political and voter appetite for such a shift, or that such an appetite can be found in time.

This leads to the fourth and final point. The set of plausible future scenarios for the world economy no longer includes a Eurozone that looks like the current set-up. It follows that the future of the European economic project will either involve a substantially more integrated Eurozone, as leaders persist with their long-running quest for currency stability and ever closer union, or it will involve a major shift in direction and a move to a much looser set of European economic arrangements than is currently the case. Either of these scenarios will of course imply quite profound changes relative to the current status quo.

Which one we get is down to Europe's voters and politicians.

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