Centre for Economic Policy Research
POLICY INSIGHT No.51
OCTOBER 2010

Greece and the fiscal crisis in the Eurozone

Willem Buiter and **Ebrahim Rahbari**
Citigroup and CEPR; Citigroup

Introduction

The saga of the Greek public finances continues. But this time, Greece is not the only country that suffers from doubts about the sustainability of its fiscal position. Quite the contrary. The public finances of most countries in the Eurozone are in a worse state today than at any time since the industrial revolution, except for wartime episodes and their immediate aftermaths. And the problems are not confined even to the Eurozone, but extend to other EU member states, like the UK and Hungary, and to Japan and the US. This essay explains how and why this situation came about and how it is likely to evolve during the rest of this decade.

In fact, only a limited number of small industrial countries are in reasonable fiscal-financial shape.

The origins of this widespread loss of fiscal control are shared by most countries and can be traced to pro-cyclical fiscal policy during the boom period preceding the financial crisis that started in August 2007, the fiscal cost of the financial rescue operations, the revenue losses caused by the recession and the discretionary fiscal measures taken to stimulate economic activity. But the uniquely serious situation in Greece owes much to country-specific features of its economy, its political institutions and its policies. Fiscal sustainability in Greece and elsewhere can only be restored via fiscal pain (tax increases and/or public spending cuts), by inflating away the real burden of the public debt, by economic growth, by sovereign default or by a bailout, and the balance of costs and benefits of these options can vary between different countries and over time.

For countries that are part of the Eurozone, this cost-benefit analysis is complicated by the legal and institutional constraints of membership. Nevertheless, we are convinced that any fiscally-challenged Eurozone member is better off within the Eurozone than outside it with an independent national monetary and/or exchange rate policy. We also believe that the Eurozone as a whole could come out of this crisis stronger than it went in if it uses this opportunity to remedy the design flaw at the heart of it – the absence of a minimal 'fiscal Europe'.

The dimensions of the fiscal problem

Table 1 shows that the fiscal troubles are widespread. In fact, only a limited number of small industrial countries are in reasonable fiscal-financial shape, i.e. Australia, New Zealand, Denmark, Norway, Sweden, Finland and Switzerland. Canada, Germany and the Netherlands, which are widely considered (and consider themselves) to be in reasonably good fiscal-financial condition, are so only compared to the truly dire conditions experienced by most of their peers.

At almost 115% and 14%, respectively, Greece's (gross) government debt and budget deficit are certainly of great concern. But these numbers are somewhat less staggering, even in peace time, when set against a Eurozone average of almost 82% for gross debt and 6% for the budget deficit. And on the whole, the fiscal situation of the Eurozone as a whole still appears to be more sustainable than that of the US, the UK, or Japan.

The roots of the fiscal unsustainability problems in Eurozone and Greece

The fiscal unsustainability problems in most advanced economies have four common roots:

First, strongly pro-cyclical behaviour by the fiscal authorities during the boom period between the bursting of the tech bubble at the end of 2000 and the onset of the financial crisis of the North Atlantic region in August 2007.

Second, the direct fiscal costs of the financial crisis, that is, the bailouts and other budgetary rescue measures directed at propping up the financial system, starting with the collapse of

Table 1. Fiscal troubles around the world

	% of 2009 nominal GDP				
	Gross debt	Net debt	Budget balance	Sturctural balance	Cyclically adjusted primary balance
Australia	15.9	-5.7	-3.9	-3.3	-2.5
Canada	82.8	28.6	-5.1	-3.2	-2.3
Czech Republic	42.0	-1.0	-5.9	-4.6	-3.7
Denmark	51.8	-5.1	-2.8	0.1	0.7
Euro area	78.7	51.7	-6.3	-3.6	-1.2
Austria	66.5	37.2	-3.5	-2.5	-0.4
Belgium	96.7	80.7	-6.1	-2.8	0.4
Finland	44.0	-63.2	-2.7	1.1	0.6
France	77.6	50.6	-7.6	-5.7	-3.7
Germany	73.2	48.3	-3.3	-1.4	0.8
Greece	115.1	87.0	-13.5	-11.7	-7.1
Ireland	64.0	27.2	-14.3	-9.9	-8.2
Italy	115.8	101.0	-5.2	-2.7	1.5
Luxembourg	14.5		-0.7	1.1	-0.2
Netherlands	60.9	28.5	-5.3	-4.6	-3.0
Norway	43.7	-153.4	9.7	-0.8	-3.8
Portugal	76.8	57.9	-9.4	-7.4	-4.7
Slovak Republic	35.7	12.4	-6.8		
Slovenia	35.9		-5.5		
Spain	53.2	34.8	-11.2	-8.3	-7.1
Hungary	84.0	58.0	-3.9	-1.6	2.2
Iceland	122.7	41.0	-9.1	-7.4	-5.0
Japan	189.3	96.5	-7.2	-5.5	-4.5
Korea	34.9	-31.0	0.0		
New Zealand	35.0	-8.1	-3.5	-1.4	-2.3
Poland	58.4	22.3	-7.1	-7.3	-5.3
Sweden	51.8	-23.4	-1.1	2.3	2.6
Switzerland		5.5	0.7	1.3	1.7
United Kingdom	72.3	43.5	-11.3	-8.6	-7.0
Unites States	83.9	56.4	-11.0	-9.1	-7.6

Notes: Gross Debt: "General Government Gross Financial Liabilites", OECD EO and "General Government Debt", Eurostat; Net Debt: "General Government Net Financial Liabilites", OECD EO; Budget Balance: "Government Net Lending", OECD EO and "General Government: Net Lending/Borrowing", Eurostat; Structural Balance: "General Government Cyclically Adjusted Balances", OECD EO; Cyclically Adjusted Primary Balance: "Cyclically Adjusted Government Primary Balance", OECD EO.

Source: Gross Debt and Budget Balance for Euro Area (and countries in Euro Area) from Eurostat, otherwise OECD Economic Outlook (EO).

Northern Rock in September 2007, and expanding massively with the rescue of Fannie and Freddie by the Federal government on September 7, 2008, the Lehman Brothers insolvency on September 15, 2008, and the last-minute rescue by the Federal government and the Fed of AIG and its counterparties in a number of interventions that started on September 16, 2008.

Third, the worldwide recession that started in 2008 and lasted in most of the advanced industrial countries until the end of 2009.[1] The recession weakened many government revenue sources and boosted certain public expenditure categories (like unemployment benefits) for the usual cyclical or automatic fiscal stabiliser reasons.

Fourth, the end of asset booms and bubbles, especially in real estate markets, plus the normalisation, from extraordinary heights, of profits and pay in the financial sector, are likely to produce a lasting reduction in the buoyancy of government revenues with respect to GDP in countries with significant construction and financial sectors, resulting in an increase in the structural primary (non-interest) deficit of the sovereign.

Together, these four developments caused an unprecedented peacetime deterioration in the public finances of most of the advanced industrial countries.[2]

In Greece, a number of country-specific factors

1 According to the NBER Business Cycle Dating Committee, the latest US recession started in December 2007 and reached a trough in June 2009. The recovery in the US is therefore 15 months old at the time of writing (September 27, 2010).

2 They also caused a sharp deterioration in the public finances of a number of emerging market economies – mainly in Central and Eastern Europe and the countries of the Commonwealth of Independent States (the successor states of the former Soviet Union minus the three Baltic nations).

added to these common causes of the fiscal troubles. In October 2009, following the Greek general election and change of government, Greece's general government budget deficit was revealed by the new government to be 12.7% of GDP rather than the 6.0% reported by the old government, and the 3.7% promised to the European Commission at the beginning of 2009. The most recent estimate from Eurostat puts the 2009 general government deficit of Greece at 13.6% of GDP. And, while the finances of many sovereigns deteriorated strongly as a result of the recent crisis, Greece entered the downturn with a large underlying public deficit already.

The deterioration in the fiscal positions of most industrialised countries has been spectacular, even more so when set against the remarkable fiscal restraint demonstrated by most emerging markets

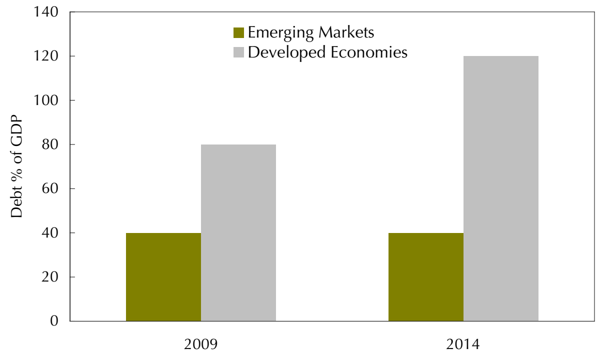
Greece's budgetary problems owe much to high entitlement and age-related spending, poor tax administration and a bloated public sector. These weaknesses are compounded by the growing uncompetitiveness of much of its industry, as measured for instance by relative normalised unit labour costs, by any other of a range of real exchange rate indices or by Greece's poor showing in such surveys as the World Bank's Doing Business 2010 or the World Economic Forum's Global Competitiveness Report 2009-2010. Spain, Portugal and Italy have similar structural real competitiveness problems.[3]

Fiscal unsustainability is not confined to the Eurozone

It is clear from Table 1 that the fiscal deterioration is not confined to a few Eurozone member states. The deterioration in the structural (or cyclically-adjusted) fiscal balance of the US and the UK is larger than in Greece, Portugal or Spain. Only Ireland and oil-rich Norway have a larger cyclically-adjusted budget deficit. Rising gross general government debt to annual GDP ratios are likely to take the US and the UK no later than 2011 into the higher-than-90% bracket for which Reinhart and Rogoff (2009b) have identified a marked negative effect on the growth rate of real GDP.

The deterioration in the fiscal positions of most industrialised countries has been spectacular, even more so when set against the remarkable fiscal restraint demonstrated by most emerging markets over the same period (Figure 1). There is only one emerging market amongst the high-government deficit countries in 2009 – India. And India, with a gross general government debt to GDP ratio of over 80% during 2009 (see IMF (2010)), is much better able to manage a 10% of GDP general government deficit, because during 2009 it had a growth rate of nominal GDP of around 11.5% and most of its public debt is denominated in domestic currency and held domestically by a still financially repressed domestic financial system cut off from full access to the global financial markets by capital controls.

Figure 1 Public debt in emerging economies and 20 developed economies



Source: IMF

It remains true, of course, that India, unlike most other leading emerging markets at the moment, is highly vulnerable to a sudden weakening of nominal GDP growth, which could cause its public debt-GDP ratio to rise sharply unless its underlying government deficit is reduced. But the near total absence of emerging market economies from the list of sovereigns with fiscal troubles and the relatively robust state of public finances in most emerging economies is truly remarkable.

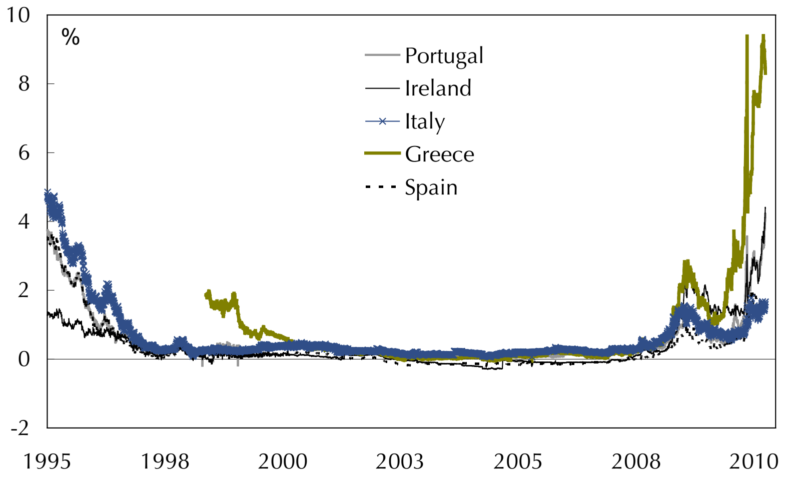
Markets wake up after an almost decade-long slumber

Prior to the creation of the Eurozone on January 1, 1999, Spain, Portugal, Italy and Ireland all had significant spreads of their 10-year sovereign bond yields over the Bund yield. This reflected market expectations of inflation and exchange rate depreciation for the currencies of these countries – unsustainable fiscal programs were 'resolved' by opting for an inflationary solution and associated expectations of currency depreciation vis-à-vis the D-mark. This was then, prior to Eurozone membership, an option because each of these countries had its own independent currency but no independent central bank committed to price stability. Greece did not join the Eurozone until January 1, 2001.

For some reason - perhaps misplaced faith in the ability of the Stability and Growth Pact (SGP) to enable the fiscally-responsible Eurozone member

3 In the World Bank's Doing Business 2010 ranking of 183 countries by the easy of doing business, Portugal ranked 48th, Spain 62nd, Italy 78th and Greece 109th. The Global Competitiveness Report 2009-2010 ranks 133 countries according to their competitiveness. Spain is ranked 37th, Portugal 43rd, Italy 48th and Greece 75th.

Figure 2 Selected Eurozone countries – 10-Year government bond spread vs. bunds, 1995-Aug 2010



Note: Inflation and exchange rate depreciation driving spreads over Bunds before the Eurozone. A lull from 1999/2001 to 2007. Sovereign default risk driving spreads over Bunds in Eurozone after 2007.
Source: DataStream.

states to discipline the fiscally-irresponsible ones, or the expectation of de-facto sovereign risk pooling among the Eurozone member states, either through cross-border fiscal transfers or through bail-outs of tottering sovereigns by the ECB - the markets believed that joining the Eurozone would deliver a lasting improvement in fiscal sustainability. From 1999 till late 2007 (for Greece from 2001 till late 2007), sovereign spreads over Bunds for the five South-West Eurozone Periphery (SWEAP) countries became very small indeed, often only 20 basis points or less (see Buiter and Sibert 2006). The onset of the crisis revealed that nothing much had changed as regards the fundamental drivers of fiscal sustainability (or of its absence). So the sovereign spreads of the SWEAP countries opened up again, but this time they reflected not inflation and exchange rate depreciation expectations, but differential perceptions of sovereign default risk.

Spreads over the 10-year German Bund rate of the sovereign 10-year bonds of Greece, Portugal, Spain, Ireland and Italy (all Eurozone members) have fluctuated quite wildly around a steadily rising trend since 2008, as can be seen from Figure 2. Five-year CDS spreads for these five countries tell a similar story. But the strong increase in the spreads at the end of 2009 and in early 2010 indicates that financial markets became extremely nervous at the end of 2009 and early 2010, as concerns about sovereign debt sustainability moved to the fore. Since September 2009, the markets have clearly perceived Greece to be in a sovereign risk class of its own, as reflected in its sovereign default risk spreads in both the CDS and the government bond markets.

The political economy of restoring fiscal sustainability

There are six ways to achieve a reduction in the non-monetary debt burden of the government (by which we mean the augmented general government – the consolidated general government (itself the consolidated federal, state and local, government including social security etc.) and central bank):

1. Fiscal pain, that is, an increase in taxes or a cut in public spending. Here it makes sense to recall that public debt problems of the advanced industrial countries are 'won't pay' problems, not 'can't play' problems. More precisely, these countries face the political economy problem of having to agree on, design and implement a fiscal burden sharing agreement – one that commands sufficient political and popular support to be successfully adopted and implemented over a period of years. Fiscal pain is more likely to be chosen as the method for addressing fiscal unsustainability the less polarised are the electorate and the polity in general. Even if a national consensus on fiscal burden sharing can be established, government institutions and political incumbents capable of swift and decisive action are also required.

2. Increased recourse to seigniorage or revenues from monetary issuance by the central bank. In addition to the revenues from base money issuance (whose real value is likely to first rise and then decline with the *expected* rate of inflation), there is the reduction in the real value of long-dated fixed-interest rate nominal debt, which is higher the greater the *unexpected* increase in the inflation rate. The incentive to use unanticipated inflation boosts to reduce the real value of servicing the public debt will be stronger the larger the share of the debt that is held externally (foreigners don't vote) and the longer the maturity or duration of the outstanding debt. The opportunity to have recourse to seigniorage would depend on the extent to

which the central bank is independent and committed to price stability. The fact that the ECB is deemed to be the central bank with the highest degree of independence and the strongest commitment to price stability would seem to weigh against this option in the Eurozone. But if a sufficient number of national Treasuries are in favour of this option, we are likely to see a "Game of Chicken" between the ECB and the Treasuries, with the Treasuries ultimately prevailing.

3. A lower interest rate on the public debt. Unfortunately, this is not a policy instrument of the sovereigns, unless the toolkit of financial repression (including capital controls and mandatory holding of public debt by banks and other financial institutions not motivated by macro-prudential considerations) though it is of course affected by policy actions and the reality and expectation of external financial support.

4. A higher growth rate of GDP. Again, the growth rate of GDP is not a policy instrument. Moreover, growth in the Eurozone is likely to be weak in the near future, even if growth turns out to be somewhat higher that the very pessimistic expectations held at the beginning of 2010 implied. In addition, history, including very recent history, has shown that higher growth often raises the pressure for higher spending, thus partly or completely negating the benign effect of higher growth on revenues.

5. Default, which here includes every form of non-compliance with the original terms of the debt contract, including repudiation, standstill, moratorium, restructuring, rescheduling of interest or principal repayment etc.

6. A bailout (which can be interpreted either as a current transfer payment from abroad or a capital transfer from abroad).

EU/IMF/ECB support measures

In early May 2010, 10-year yields on Greek government debt topped 10%, while the spread on 5-year credit default swaps exceeded 900 basis points, and there was substantial doubt – to say the least – about the willingness of markets to finance Greece's remaining sovereign funding needs of around €30 billion for the current fiscal year even at these very high rates. At the same time, spreads versus Bunds on debt of the governments of Spain, Portugal and Ireland also reached levels not seen since the mid-1990s amid concerns about the health of the public and financial balance sheets in these countries.

In response, three sets of measures were announced. First, the EU and the IMF announced a €110 billion support package for Greece. The failure of the Greek support package to stop the run on the sovereign debt of Spain, Portugal and Ireland then prompted the creation of a bigger sister for the rest of the Eurozone member states by the name of the European Stabilisation Mechanism. This consists of the European Financial Stability Facility (EFSF), which can raise up to €440 billion of intergovernmental money, and a further €60 billion supranational facility administered by the European Commission.[4] Up to €250 billion of IMF money will be available to supplement the European Stabilisation Mechanism. Third, the ECB lent its own support to prevent major market disruptions, to rule out sovereign defaults it did not consider warranted by the fundamentals and to prevent another banking crisis in the Eurozone, where many banks had unknown but potentially significant exposures to the fiscally-challenged sovereigns. Until the EFSF became operational on August 4, 2010, the €60 billion supranational fund and the ECB/Eurosystem were all that stood between the EA member states and a potentially devastating sovereign debt crisis and banking crisis.

The Greek support package

Details about the joint Eurozone/IMF support program for Greece were presented on May 2. The Eurozone/IMF agreed to provide €110 billion in what are initially three-year loans, with €80 billion provided by the Eurozone countries according to their respective paid-up capital shares in the ECB, with the remainder made up by the IMF. The loans would be disbursed in tranches and the program would imply that Greece would not need to have to access markets again until 2012. Rates for variable rate loans will be 3-month Euribor plus 300 basis points (bps) for maturities up to 3 years (400bps for longer maturities). For fixed rate loans, 3-month Euribor is replaced with the swap rate for the loan's maturity and both fixed and variable rate loans also incur a one-off 50bps charge for operating expenses. In addition, Greece agreed to subject itself to tough conditionality, negotiated and applied by the IMF. In exchange for external aid, Greece agreed to implement a fiscal adjustment worth €30 billion (or 12.5% of 2009 GDP) spread over the next three years. This tightening comes on top of the measures already announced (and partly implemented) so far this year, which amounted to around 3% of GDP. The deficit is targeted to decline to 3% of GDP by 2014,

4 The €60 billion supranational facility, which is supposed to be based on Article 122.2 of the Treaty is in principle available to all EU members, not just the Eurozone members.

postponing by two years the deadline previously agreed with the EU Commission.

The bulk of the measures will focus on the same areas as previous austerity packages, imposing higher indirect taxes hikes (the VAT rate to move up again from 21% to 23%, and fuel and alcohol taxes to increase by 10 percentage points) and further public sector wage, pension and employment cuts. More importantly, a change in the state pension system will also be introduced to raise the minimum retirement age to 60 years. Reform of the labour market, ending the closed shop features of around 90 professions in the service sectors, privatisation of a number of state enterprises and tax administration reform are also part of the program. Finally, a €10 billion contingent fund will be set up as part of the package to support the Greece banking sector over the next three years.

The European Stabilisation Mechanism

Over the weekend of Friday, 7 May, to Sunday, 9 May, Ecofin, the Council of the finance ministers of the 27 EU member states, together with the ECB and the European Commission, cobbled together a financial rescue package for the Eurozone member states.[5] The support measures are made up of three parts, a supranational €60 billion EU fund administered by the European Commission, a €440 billion intergovernmental facility, the EFSF (a special purpose vehicle incorporated in Luxembourg), and €250 billion from the IMF. We shall refer to them jointly as the European Stabilisation Mechanism, even though that term strictly refers only to the two EU components.

In fatc, there is nothing like a blanket no-bailout clause that prevents the bailout of an EU or EU sovereign by another sovereign or by any EU institution, including the ECB.

The contribution of each Eurzone country to this facility is supposed to be according to its share of the paid-up capital of the ECB. In addition, to attract a triple-A rating for its debt, each Eurozone member state is supposed to guarantee 120% of its contribution and a cash reserve is supposed to be built up. It has since transpired that these 'enhancements' are to come out of the €440 billion committed by the Eurozone members. The net resources available for disbursement could therefore end up being no more than €300 billion, or even less. In order to access the EFSF, member states need to request a loan and agree on a memorandum of understanding with the European Commission. This will include the conditions attached which are presumably along the lines of those included in the Greek support package. While the loan terms are only finalised at the time of disbursement, the formula used will presumably also be very similar to those agreed on for the Greek facility.

5 The 27-member Ecofin consists of the Eurogroup (the finance ministers of the 16 member states of the Eurozone) and the 11 finance ministers of EU member states outside the Eurozone.

ECB support measures

With only the €60 billion supranational facility actually approved, and with even that small facility not yet operational, there remained a risk on May 10 that contagion from the Greek sovereign could have created a liquidity and funding crisis for other Eurozone sovereigns, notably Portugal, Spain and Ireland, but possibly even Italy or others. Following the weekend of 7 May to 9 May, only the ECB had the means to intervene and safeguard the Eurozone sovereigns at risk from a contagion-driven sudden stop and sovereign default.

The ECB chose to act and announced a number of policy changes, the most important and remarkable of which was its commitment to purchase government securities outright in the secondary markets - an unprecedented departure both from its past practice and from its prior view of how an independent central bank ought to behave. Under its newly-created "Securities Markets Programme", the ECB can purchase any private and public securities outright in secondary markets. The ECB then went to great lengths to explain that this did not amount to quantitative easing, as it would sterilise these purchases by collecting term deposits. As 'sterilisation' means replacing overnight deposits with the central bank with one-week term deposits (which constituted eligible collateral for borrowing from the Eurosystem), the distinction between quantitative easing and asset purchases under the Securities Markets Programme is semantic, not substantive. It also stressed that it acted on the basis of its financial stability mandate, addressing dysfunctional markets, and not out of a concern for sovereign liquidity or even solvency.

The modalities of a bailout in the Eurozone/EU

Is a bailout legally possible?

One often hears statements, especially from opponents of bailouts of EU member states by other EU-member states, that the 'no-bailout clause of the Treaty' (currently the Lisbon Treaty) forbids a bailout of a member state government by other member state governments, the European Commission or the ECB. In fact, there is nothing like a blanket no-bailout clause that prevents the bailout of an EU or EU sovereign by another sovereign or by any EU institution, including the ECB. What Article 125.1 of the Treaty forbids, subject to a key qualification, both the EU and member states from engaging in, is *to assume the commitments* of the public sector of another member state, or *to be liable for them*. In plain English, this prevents the EU and member states from guaranteeing the public debt of other member states. It does not even prevent the EU or member states bilaterally or jointly making loans to or giving grants to another member state. It does not prevent the EU and member states from purchasing outright the debt of another member state sovereign. It does not prevent member states from guaranteeing bank loans provided by private banks or state-owned/state-controlled banks to a member state sovereign. Only guarantees of foreign public debt are not permitted, and even (mutual financial) guarantees are permitted as long as they are "*for the joint execution of a specific project*".

What is a project? It is not defined in the Treaty. Anything can be a project. To a wife, a husband is a project. Article 125.2 grants the Council the power to define a project to be anything it wants it to be.

Bailout by other EU Member states or by the EC

According to the European Stabilisation Mechanism Framework Agreement, it was created under Article 122.2 of the Treaty which says "*Where a Member State is in difficulties or is seriously threatened with severe difficulties caused by natural disasters or exceptional occurrences beyond its control, the Council, on a proposal from the Commission, may grant, under certain conditions, Union financial assistance to the Member State concerned….*"

Obviously, Greece's fiscal predicament is not due to a natural disaster or some other external event beyond its control, but to an internal man-made disaster. The same would presumably apply to other applicants to the facilities though the afflicted member states may well argue that being cut off from financial markets – due to irresponsible policies or not – is an event that is beyond their control. Arguably, even solvent and prudent states can become the victims of contagion and this would be beyond their control. The fact that the only Eurozone member states that have been tested by the markets have been those whose public finances are clearly unsustainable rather weakens the case for application of Article 122.2 on the grounds that Portugal, Spain, Ireland etc. are the hapless victims of blind, irrational contagion. A justification of the Council decision to provide Union financial assistance based on this article truly is a bit of a stretch.

Bailouts by the ECB

Article 123 (ex Article 101 TEC) of the Treaty forbids the ECB (or the Eurosystem) from giving credit to or purchasing sovereign debt from sovereigns. However, it does not say anything about purchasing sovereign debt on the secondary markets, a distinction the ECB was adamant to highlight though, in our view, these actions, while certainly appropriate, conform more to the letter than the spirit of the Treaty.

Bailouts by the IMF

It is sometimes argued that the IMF cannot lend to Greece because, according to Article V of its Articles of Agreement, it can only lend to countries with balance-of-payments difficulties and Greece or any other individual member of the Eurozone no longer has a balance of payments – only the Eurozone as a whole does.

Since the beginning of the Eurozone, the member countries no longer have a "balance of payments" in the sense of 'monetary balance', 'international reserve balance' or 'official settlements balance' – measuring the net increase in gold and official foreign exchange reserves (typically held by the central bank). Indeed, only the 16-nation Eurozone as a whole has a balance of payments in this narrow sense.

However, it is clear that IMF itself does not use the term balance of payments in this narrow way, but instead uses it to refer to the balance of a nation's external transactions more broadly. Clearly, Greece has a balance-of-payments problem. Its low private and public sector saving rates have resulted in persistent external current account deficits, which have cumulated into a large negative net external investment position (since 2000 it almost doubled from -38.8% to -69.8% in 2008). The IMF, with its long history of providing external resources to over-extended governments and nations on a short-term basis and against strict macroeconomic, financial and budgetary conditionality, is ideally set up to address precisely these kinds of difficult conditions. Its prior absence in dealings with Eurozone member countries can mainly be traced to earlier vehement opposition by the ECB, the President of the Eurogroup (Jean-Claude Juncker) and many other Eurozone representatives (notably the French government) for reasons of pride and prestige.

Does the German constitution allow a bailout of Greece?

Two court cases remain before the German Federal Constitutional Court in Karlsruhe. The first action concerns the law governing Germany's contribution to the Greek facility and argues that Germany's participation would violate Germany's Basic Law (Constitution), specifically that it would violate the constitutional right to property (Article 14 of the Basic Law) and other fundamental principles of the Constitution, such as the principle of democracy and the social state (Articles 20, 23 and 28 of the Basic Law).

The second action before the Constitutional Court, brought by a member of the Bundestag, is based on the argument that the laws governing Germany's contribution to the Greek facility and to the EFSF are in breach of Article 125 of the Treaty on the Functioning of the EU. This is the Article that contains what is often referred to as the 'no bailout clause'. The claimant argues that the Act has to be considered as an amendment of the European Treaties and could only enter into force if the necessary procedure for such amendments at the European level had been respected. Therefore, the claimant contends, the Bundestag did not have the competence to approve the guarantees.

We shall not try to argue the legal merits of this interpretation, beyond pointing out that Article 125 strictly only precludes member states from guaranteeing the debt of governments of other member states, and even that preclusion is waived provided this takes the form of mutual financial guarantees for the joint execution of a specific project, to be defined by the Council. The decision of the Court, like that of Supreme Courts in other countries, will likely be driven by political concerns and considerations, rather than textual exegesis.

The road ahead for Greece and the Eurozone

Greece's debt burden is unsustainable, with or without the support package

By early May, Greece had already received €20 billion (€14.5 billion from the EU, €5.5 billion from the IMF). On August 5, the EU/IMF announced that the second tranche of €9 billion would be released as Greece had hit the milestones specified in the initial agreement. So will the Greek consolidation effort succeed in bringing down the public debt burden and restoring fiscal sustainability? A reading of the literature on successful fiscal consolidations, such as in Canada (1994-98), Sweden (1993-98), and New Zealand (1990-94) or more broadly, suggests some caution. First, the initial debt and deficit positions were not as unfavourable in these countries. Furthermore, studies such as Ardagna (2004), Alesina and Ardagna (2002), and European Commission (2007) find that past economic growth, a higher level of the initial deficit to GDP and a lower level of the initial debt to GDP ratio increase the chances that consolidation will succeed. Only the second of these favours Greece.

Other lessons from these studies are that for improvements in the public finances to be lasting, significant public sector reforms and other structural reforms including deregulation, privatisation, labour market reforms and product market reforms are required. These tend to reduce the scope and scale of the state's involvement in the economy, through public sector employment, pay and pension cuts and through changes in ownership, accountability mechanisms and incentives. They also increase the flexibility of the wider economy and raise the level and possibly the growth rate of potential output. Nowhere in Europe would such changes be more appropriate than in Greece.

Similarly, fiscal consolidations achieved mainly through reductions in public spending, and specifically through reductions in current public spending (mainly public sector pay and employment and entitlement spending), tend to be sustained more effectively than consolidations achieved principally through tax increases.

...even if all the promised fiscal tightening is implemented, and if the Greek economy does not contract more severely than expected, the general government gross debt will reach 145-150% of GDP by 2013. To talk of it being stabilised at that level is disingenuous.

The IMF catalogue of conditionality contains a number of measures that fall into the right buckets from the perspective of these studies. And so far Greece appears to show some resolve in following through on its commitments. But even if all the promised fiscal tightening is implemented, and if the Greek economy does not contract more severely than expected, the general government gross debt will reach 145-150% of GDP by 2013. To talk of it being stabilised at that level is disingenuous. The government interest bill on that debt would be around 8% of GDP, but the primary balance would be in surplus. A high level of debt (with a correspondingly high interest burden), with small or negative primary deficits, are exactly the circumstances under which it would be individually rational for a sovereign creditor to default. Since external or third-party enforcement of contracts involving the sovereign is unlikely, the only real penalty for default is the temporary exclusion of a defaulting sovereign from the international and possibly also the domestic capital markets. Since the collective memory of markets is rather short and primary budgets will by then be in balance, the present value of access to international capital markets will most likely be less than the burden of interest and principal payments on the outstanding government debt.

The political economy of fiscal tightening is already quite complex and fraught in Greece and the current fragile consensus for fiscal consolidation is highly unlikely to survive until 2013 and beyond. These facts and the logic of strategic default will not be lost on the markets. We therefore expect, with a high degree of confidence, that a restructuring of Greek public debt, involving both maturity lengthening and haircuts for creditors will have to take place relatively soon. Such restructuring would ideally have taken place in May 2010, as a precondition for Greek access to EU and IMF funds. Instead, a restructuring, if and when it occurs, will be against the IMF/EU agreement and would impose capital losses on Greece's Eurozone creditors, because the loans from the Greek facility (and from the EFSF) are pari passu with the outstanding Greek debt (the IMF claims preferred creditor status).

Why was a restructuring not already part of the original IMF/EU agreement for Greece? The answer is that a Greek sovereign default would not be costless to the rest of the Eurozone

In a recent IMF study (Cottarelli et. al. 2010) it is argued that sovereign default in today's advanced economies is unnecessary, undesirable and unlikely. Certainly for the most highly indebted Eurozone sovereigns (such as Greece, Italy and even Ireland (if we add to the conventional gross general government debt the exposure of the sovereign to toxic bank assets through the NAMA (the state-owned bad bank), through the cost of recapitalising the banks and through its guarantee of most of the remaining bank debt), the undesirability of a sovereign default is not obvious. Any breach of contract damages the rule of law, but there are circumstances where default may be the lesser evil.

The results of both private (debtor) and social cost-benefit analyses of sovereign default depend on what the alternatives are, i.e. on which taxes will be raised and which spending programmes will be cut. Sovereign default redistributes resources from the creditors (the bond holders) to the tax payers and the beneficiaries of public spending that would be cut in the absence of a default. These competing claims carry different weight in different times and circumstances. With Greece likely to have a general government gross debt not much below 150% of annual GDP by mid-2013 (if the debt is not restructured before that time), even a low estimate of the annual interest bill of around 7% of GDP would represent a significant fiscal burden. The cost to the sovereign of exclusion from the international and possibly even the local capital markets following default depends on the current and prospective future path of the government's primary surplus and the duration of the exclusion.

Most examples of countries discussed in Cottarelli et. al. (2010) that worked off high public debt burdens without sovereign default involved countries that either used the unanticipated inflation tax, and/or achieved a significant real exchange rate depreciation through a nominal exchange rate depreciation and the fortunate combination of real wage flexibility and either nominal wage rigidity (the Keynesian configuration) or nominal wage flexibility. High real GDP growth was always part of the process. Greece does not have independent national monetary policy or nominal exchange rate flexibility. Even if it did, the fact that Greece is more likely to have real wage rigidity and money wage flexibility than the Keynesian configuration, makes these the Cottarelli et. al. examples of limited relevance to Greece. Sustained high real growth in Greece would, as we argued earlier, require an economic

Table 2 Claims of European banks on Greece, $ billion, March 2010

	Q4 2009		Q1 2010	
	Total $billion	% of European Banks Total	Total $ billion	% of European Banks Total
European Banks	193.1		182.6	
France	78.8	40.8	71.1	39.0
Switzerland	3.7	1.9	4.2	2.3
Germany	45.0	23.3	44.2	24.2
UK	15.4	8.0	11.8	6.4
Netherlands	12.2	6.3	11.3	6.2
Portugal	9.8	5.1	11.7	6.4
Ireland	8.6	4.5	8.0	4.4
Italy	6.9	3.6	6.8	3.7
Belgium	3.8	2.0	3.7	2.0
Austria	4.8	2.5	5.2	2.8
Spain	1.2	0.6	1.2	0.6
Sweden	0.7	0.4	1.0	0.5
Turkey	0.3	0.2	0.5	0.3

Note: European banks refer to domestically-owned banks of European countries that report claims on an ultimate risk basis (i.e. Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, Turkey and the UK).

Source: BIS (2010) http://www.bis.org/statistics/consstats.htm, Table 9D, and Citi Investment Research and Analysis and political transformation that appears highly unlikely under current circumstances. The blanket statement that sovereign default in today's advanced economies is unnecessary, undesirable and unlikely would appear to be based on bad economics and simplistic political economy.

The role of the banking sector

Why was a restructuring not already part of the original IMF/EU agreement for Greece? The answer is that a Greek sovereign default would not be costless to the rest of the Eurozone. The reason is that most of the exposure to the Greek sovereign and to other Greek borrowers (e.g. the Greek banks) is with the banks from other Eurozone member states (see below). The choice faced by the French and German authorities in particular is to either bailout Greece or to bailout their own banks. Politically, neither financial rescue action would be popular. Which one would be cheaper financially?

A fiscally weak country is better off in the Eurozone than outside it.

European banks, especially Eurozone banks, are seriously exposed to Greek risk, as is clear from Table 2, which reproduces some of the Bank for International Settlements data on the consolidated foreign claims of reporting banks — ultimate risk basis. For the 24 reporting countries, the total exposure of their banks to Greece at the end of September 2009 was $298.3 billion. European banks accounted for almost all of this, $272.4 billion.

We believe it is plausible that a bailout of Greece with tough conditionality would be cheaper for the Eurozone member states than a bailout of their own banks, should Greece default unilaterally. The reason is that a tough bailout would discourage recidivism by Greece as well as emulation of its fiscal irresponsibility by other would-be applicants for financial support (e.g. Spain, Portugal, Italy, Ireland etc…). However, a soft bailout of Greece would be more expensive than a bailout of the domestic banks of the other Eurozone members, because it would lead to open-ended and uncapped future demands for financial support from all and sundry.

The threat of letting Greece fail and instead bailing out the banks of France, Germany and other Eurozone countries whose banks are exposed to the Greek sovereign and to Greek private sector risk may in the spring of 2010 have had rather limited credibility because of the extreme concentration of this exposure in the Eurozone banks. As the exposure to the Greek sovereign, and to Greece generally, is moved off the balance sheets of the Eurozone banks during the next three years and dispersed more thinly over a wide range of private sector portfolios (or taken under the wings of the state, through the Greek facility or through the ECB's purchases of Greek sovereign debt, by transferring it to state-owned or state-controlled banks like KfW or CDC, or directly to a government-owned 'bad bank' or to the Treasury balance sheet), the systemic damage that could be caused by a Greek sovereign default would diminish. The threat: 'we don't have to bail Greece out, we can live with the financial consequences of a sovereign default in Greece', should become more credible as time passes.

The most immediate threat to the Greek sovereign is, in our view, likely to come through its banking system. Greece has no independent national central bank which can, in the final analysis, be compelled by the government to act the way the government wants it to act. The Greek commercial banks now obtain most of their short-term funding from the ECB/Eurosystem, using mainly Greek sovereign debt as collateral. When the value of the Greek sovereign debt declines in the secondary market, the mark-to-market value of the collateral offered by the Greek banks to the ECB/Eurosystem declines and triggers margin calls (demands for additional collateral to make up for the reduced value of the existing collateral). Their funding needs are likely to be exacerbated by a withdrawal of deposits that could become a run – both from deposits over the limit of the deposit insurance scheme and from deposits below that limit, if the solvency of the national deposit insurance scheme is in doubt.

Similarly, while the EFSF is technically only supposed to be a sovereign liquidity facility and banks cannot directly access it, much of the concerns about fiscal sustainability of Eurozone countries that led to its creation are driven by contingent liabilities that the sovereigns would take on if some of their financial institutions fail.

The sovereign debt problems encountered by most advanced industrial countries are thus the logical final chapter of a classic 'pass the baby' (aka 'hot potato') game of excessive sectoral debt or leverage. First, excessively-indebted households passed part of their debt back to their creditors – the banks. Then the banks, excessively leveraged and at risk of default, passed part of their debt to the sovereign. Finally, the now overly-indebted sovereign is passing the debt back to the households, through higher taxes, lower public spending, the risk of default, or the threat of monetisation and inflation.

Should Greece leave the Eurozone?

Is a fiscally-challenged country likely to want to leave the Eurozone? The brief answer is no – quite the contrary. A fiscally weak country is better off in the Eurozone than outside it.

The only argument for leaving the Eurozone is that the introduction of a new national currency (New Drachma, say) would lead to an immediate sharp nominal and real depreciation of the new currency and a gain in competitiveness, which would be most welcome. It also would not last. The key rigidities in small open economies like Greece are real rigidities, not persistent Keynesian nominal rigidities, which are necessary for a depreciation or devaluation of the nominal exchange rate to have a material and durable impact on real competitiveness. Unless the balance of economic and political power is changed fundamentally, a depreciation of the nominal exchange rate would soon lead to adjustments of domestic costs and prices that would restore the old uncompetitive real equilibrium.

All other arguments either favour staying in for a fiscally weak country or are neutral.

- As regards the existing stock of sovereign debt, in or out makes no difference. Re-denominating the old euro-denominated debt in New Drachma would be an act of default. A country might as well stay in the Eurozone and default on the euro-denominated debt.

- As regards new government borrowing, issuing New Drachma-denominated debt would be more costly (because an exchange risk premium would be added to the sovereign risk premium) than new borrowing using euro-denominated debt as part of the Eurozone.

- There would be massive balance sheet disruption for banks, other financial institutions and other corporates with large balance sheets, as the existing stock of assets and liabilities would remain euro denominated but there would no longer be a euro lender of last resort. It may be possible for contract and securities entered into or issued under Greek law alone, to be redenominated in New Drachma by the Greek parliament passing the necessary legislation. While such actions would not make the Greek sovereign a likely target for lawsuits in foreign courts, they would constitute acts of default that could trigger credit default swaps. In addition, cross-border contracts and securities issued in other jurisdictions could not be redenominated that way without this making the Greek sovereign vulnerable to foreign lawsuits.

- There would be no fiscal-financial support from other Eurozone member states should a country leave the Eurozone.

- Leaving the Eurozone means leaving the EU. There is no such thing as a former Eurozone member that continues as an EU member. A current member wishing to leave the Eurozone but continue as an EU member would have to leave both the Eurozone and the EU and then re-apply for EU membership. Under the Lisbon Treaty, there now is a procedure for leaving the EU (see Athanassiou (2009)).

- A country cannot be expelled from the Eurozone, or from the EU (see Athanassiou (2009)).

Re-denominating the old euro-denominated debt in New Drachma would be an act of default. A country might as well stay in the Eurozone and default on the euro-denominated debt.

The only real threat of the Eurozone breaking up comes from the possibility that one or more of the fiscally strongest and more competitive members (Germany) could decide to leave the Eurozone (and the EU), because of a fear of becoming the bailer-out of first resort for all would-be fiscally-insolvent Eurozone member states. The changing of the generations in Germany from Kohl to Schröder and then to Merkel has weakened the traditional umbilical link of Germany, and especially Germany's political class, to the EU and the Eurozone, but not (yet) to the point that one can reasonably envisage Germany leaving the Eurozone and the EU. Given half a decade of funding and subsidising other countries with unsustainable fiscal positions and no capacity or willingness to correct these, that could change.

Prospects for Eurozone: Institutional reform to survive and prosper

The EFSF constitutes an important step towards the creation of a "minimal fiscal Europe" necessary for the survival and prosperity of the Eurozone for both political and economic reasons.

To the nations sharing a common currency in a formally symmetric monetary union (rather than by unilateral adoption of another nation's currency), national sovereign default becomes an issue of common concern, beyond what would be called for by purely individually rational national concerns about contagion and other spillovers. However, recognising national sovereign default as a common concern does not mean that national sovereign risk is fully pooled in a monetary union. The debt of the sovereign of an individual member state can still be restructured, be subject to a haircut or be defaulted on unilaterally. Subsidies from solvent sovereigns to sovereigns of doubtful fiscal probity are not necessarily called for.

Unilateral sovereign default by one or more Eurozone member state government would from a technical economic and financial perspective be consistent with the survival of the Eurozone. The defaulting sovereign would have no economic incentive to leave, and the countries that would otherwise have been called upon to provide financial support to prevent the sovereign default will also be happy to stay in, even if they would have been inclined to leave should the financial support for the fiscally weak member state have turned into an open-ended and uncapped stream of subsidies. It is, however, likely that political support for continued membership in the Eurozone (and the EU) would decline both among the political elites of the defaulting country and among its citizens.

...it is clear that a minimal fiscal Europe is necessary to make up for the loss of independent monetary policy as a sovereign default prevention mechanism.

From an economic perspective too, it is clear that a minimal fiscal Europe is necessary to make up for the loss of independent monetary policy as a sovereign default prevention mechanism. The loss of macroeconomic stabilisation potential associated with giving up independent national monetary policy (including the alleged ability of nations to use national monetary policy to manage the real effective exchange rate in a desirable manner) is, in our view, at best a minor issue. It may in fact well turn out to represent a net gain rather than a loss. This is because, in a world with a high degree of financial capital mobility and a floating exchange rate, the exchange rate is more likely to be a source of extraneous noise, excess volatility and persistent misalignment of real exchange rates than an effective buffer against internal or external shocks. But giving up any scope for the discretionary use of both the anticipated and the unanticipated inflation taxes to reduce the real value of domestic-currency-denominated monetary and non-monetary public debt should be compensated for by some form of mutual fiscal or liquidity insurance.

In addition to the creation of the EFSF, some further actions are required to create an effective 'minimal fiscal Europe'.

First, the EFSF should be made permanent. The risk of one or more Eurozone nations straying from the path of fiscal probity will always be with us. So should the institutions and policy instruments to deal with that contingency.

Second, the size of the EFSF should be increased. For it to be an effective deterrent, it has to satisfy Colin Powell's dictum that if you go in at all, you go in with overwhelming force. We believe that a 'big bazooka' version of the European Stabilisation Mechanism would require that it be able, once it has been fully pre-funded (as it ought to be), to finance all Eurozone sovereigns for 2 years. That means at least €2 trillion of funds available for transfer. This enhanced EFSF should be pre-funded. Without pre-funding, if a large member state (Spain or Italy) were to end up using the facility, the likelihood of the remaining members being able to fund the EFSF through triple-A debt issuance would be low. Speedy pre-funding could only occur if the EFSF were to borrow the funds from the ECB/Eurosystem in the first instance, with the loans from or debt to the ECB/Eurosystem repaid over a period of years – perhaps as much as a decade.

Third, the conditionality attached to the loans has to be tough and credible, and must be enforced rigorously. Any nation requesting use of the facility has to be willing to accept the full array of fiscal-financial and structural reform conditionality.

Fourth, the loan facilities must be supplemented with a Sovereign Debt Restructuring Mechanism to achieve an orderly restructuring of the debt of sovereigns for whom default is unavoidable. This mechanism could be invoked 'ex-ante', that is, there could be an upfront sovereign debt restructuring involving both maturity lengthening and haircuts for the creditors, should the European Commission, the ECB and the IMF determine that there either is a sovereign insolvency problem or that the odds on a successful program are much better following a restructuring of the public debt.

...a collective, simultaneous fiscal crisis affecting all five peripheral Eurozone countries could stretch the political fabric of cross-border fiscal-financial solidarity to breaking point

The Sovereign Debt Restructuring Mechanism should also be invoked 'ex-post', in the case of wilful non-compliance with the conditionality by a borrowing country. This is because the ultimate sanctions against nations wilfully failing to comply with the conditionality are the refusal to extend new loans and the calling of outstanding loans, as well as the loss of eligibility for the non-compliant nation's sovereign debt as collateral with the Eurosystem. This would in all likelihood push the non-compliant borrower into default. This default should be handled in an orderly manner through the Sovereign Debt Restructuring Mechanism.

Other possible sanctions for non-compliance with conditionality include the forfeit of Structural and Cohesion Funds, the suspension of voting rights in the Eurogroup (the finance ministers of the Eurozone) and in Ecofin, and suspension of voting rights in ECB Governing

Council. Loss of voting rights would require Treaty amendments.

Fifth, a well-functioning monetary union requires a fund to recapitalise systemically important cross-border financial institutions, either to permit them to continue operating or to allow them to be wound up or liquidated without unnecessary social costs. Let's call this the Financial Institution Recapitalisation Fund. Its funding (which could be created using the Enhanced Cooperation procedures in the Lisbon Treaty) could come from the national Treasuries of the Eurozone or the EU, from the systemically important financial institutions that would benefit from it, or from some combination of these two sources. The EFSF and the Financial Institution Recapitalisation Fund could be separate institutions or they could be merged.

Finally, note that the minimal fiscal Europe does not require independent tax and borrowing powers for a supranational European Fiscal Authority.

Conclusion

The current fiscal problems faced by Greece and other Eurozone countries are of a severity unprecedented in peace time. The resolution of this situation will most likely involve a combination of fiscal pain and debt restructuring, with the latter all but inevitable in the case of Greece.

Nevertheless, the Eurozone and the EU could come out of this crisis stronger than it went in. A first step has already been taken with the creation of the EFSF. Further steps to create a viable minimal 'fiscal Europe' are needed, including a burden-sharing arrangement for the recapitalisation or orderly liquidation of systemically important cross-border financial institutions, an increase in the size and duration (to eternity) of the EFSF, credible conditionality attached to the loans it disburses, and the creation of an Sovereign Debt Restructuring Mechanism for Eurozone state governments.

Any rational would-be sovereign defaulter would stay in the Eurozone. The near-term risks to the Eurozone, though very small, come from possible outbursts of irrationality and misunderstandings of each others' intentions by the protagonists in the sovereign debt debate. A clear example would be the removal of the Greek Prime and finance ministers (Papandreou and Papaconstantinou) from their positions and their replacement by isolationists, populists or conspiracy theorists. The new leadership could, in a fit of collective blindness, decide to leave the Eurozone and the EU. We consider this highly unlikely, but not impossible. The risk of Germany and other fiscally strong countries deciding to leave the Eurozone and the EU (and to recreate it under a different name without the fiscally weak current member states) is both farther into the future (say 5 to 10 years) and very small, because we don't consider a soft bailout to be a likely outcome of the current bailout game.

Although we believe that the 'too big to save' problem has been overstated as regards Spain and even Italy, a collective, simultaneous fiscal crisis affecting all five peripheral Eurozone countries could stretch the political fabric of cross-border fiscal-financial solidarity to breaking point. The financial and economic resources to prevent a default are clearly there – the average fiscal position of the Eurozone is significantly stronger than that of the US and the UK, and we consider neither the US nor the UK to be likely candidates for sovereign default. The politics of cross-border mutual fiscal insurance and support are, however, complex and may not fall in place at the pace required by an unfolding financial crisis.

References

Ahrend, R., Catte, P. and Price, R. (2006), 'Interactions between monetary and fiscal policy: how monetary conditions affect fiscal consolidation', OECD Economics Department Working Paper 521.

Alesina, Alberto and Allan Drazen (1991), "Why are stabilizations delayed?" A*merican Economic Review*, American Economic Association, vol. 81(5), pages 1170-88, December.

Alesina, Alberto and Silvia Ardagna (2002), "Tales of Fiscal Adjustment", *Economic Policy*,Volume 13 Issue 27, pp. 487-545, Published Online: 4 Jan 2002.

Alessandri, Piergiorgio and Andrew G. Haldane (2009), "Banking on the State", Bank of England, November.

Ardagna, S. (2004), 'Fiscal stabilisations: when do they work and why?' *European Economic Review*, Vol. 48, No 5, pp.1047–1074

Asonuma, Tamon (2009), "Sovereign default and renegotiation: recovery rates, interest spreads and credit history", Boston University working paper, April 12,

Athanassiou, Phoebus (2009), "Withdrawal and Expulsion from the EU and EUROZONE", European Central Bank Legal Working Paper Series 10, December 2009.

Briotti, G. (2004), 'Fiscal adjustment between 1991 and 2002: stylized facts and policy implications', ECB Occasional Papers 9.

Buiter, Willem H. and Anne C. Sibert (2006), "How the Eurosystem's Open-Market Operations Weaken Financial Market Discipline (and what to do about it)" in *Fiscal Policy and the Road to the Euro,* National Bank of Poland, Warsaw, October 2006, pp. 29-58.

CMA (2010), Global Sovereign Credit Risk Report, 1st Quarter.

Cecchetti, Stephen (2010), "The future of public debt: prospects and implications", BIS

Powerpoint Presentation.
Claessens, Stijn, (1990),."The debt Laffer curve: Some estimates," *World Development*, Elsevier, vol. 18(12), pages 1671-1677, December.
Cohen, Daniel (1991), *Private Lending to Sovereign States: A Theoretical Autopsy,* Cambridge, Massachusetts: MIT Press.
Cottarelli, Carlo, Lorenzo Forni, Jan Gottschalk and Paolo Mauro (2010), "Default in Today's Advanced Economies: Unnecessary, Undesirable and Unlikely", IMF Staff Position Note, September 1, SPN/10/12.
Crowe, Christopher and Ellen E. Meade (2008), Central bank independence and transparency: Not just cheap talk (Part 1), *VoxEU.org*, 27 July,
Cukierman, Alex, Steven B. Webb and Bilin Neyapti (1992), "Measuring the Independence of Central Banks and Its Effect on Policy Outcomes," *World Bank Economic Review*, Oxford University Press, vol. 6(3), pages 353-98, September.
Department of Finance, Government of Ireland (2008), Credit Institutions (Financial Support) Act 2008, 2 October 2008,
Eijffinger, Sylvester C. W. and Johan de Haan, (1996). "The Political Economy of Central-Bank Independence," *Princeton Studies in International Economics* 19, International Economics Section, Department of Economics Princeton University.
European Commission (2007), "Lessons from successful fiscal consolidations", Part IV of Public Finances in EUROZONE 2007, European Economy No 3/2007, Directorate-General Economic and Financial Affairs, pp. 193-238.
European Commission (2010)
Grilli, Vittorio , Donato Masciandaro and Guido Tabellini (1991): "Political and Monetary Institutions and Public Financial Policies in the Industrial Countries", *Economic Policy,* 13, 341-92
Guichard, S., Kennedy, M., Wurzel, E., and Andre, C. (2007), What promotes fiscal consolidation: OECD country experiences, OECD Economics Department Working Papers 553
Hagen von, J., Hughes Hallett, A. and Strauch, R. (2002), 'Budgetary consolidation in Europe: quality, economic conditions and persistence', *Journal of the Japanese and International Economies*, Vol. 16, No 4, pp. 512–535.
Hendricks, Ken, Andrew Weiss and Charles A. Wilson (1988), "The War of Attrition in Continuous Time with Complete Information," *International Economic Review*, Department of Economics, University of Pennsylvania and Osaka University Institute of Social and Economic Research Association, vol. 29(4), pages 663-80, November.
International Monetary Fund (2010), India: 2009 Article IV Consultation—Staff Report; Staff Statement; Public Information Notice on the Executive Board Discussion; and Statement by the Executive Director for India, IMF Country Report No. 10/73, March.
International Monetary Fund, Articles of Agreement, Article V.
IMF (2010a) Sixth Edition of the IMF's Balance of Payments and International Investment Position Manual, January
IMF (2010b) Appendix 3, Regional Arrangements: Currency Unions, Economic Unions, and Other Regional Statements
Jonung, Lars and Eoin Drea (2009), "The euro: It can't happen. It's a bad idea. It won't last. US economists on the EUROZONE, 1989 – 2002", European Economy, Economic Papers 395, December 2009.
Manasse, P. and N. Roubini (2005), 'Rules of thumb' for sovereign debt crises', IMF Working Paper 05/4.
Porter, Richard D. and Ruth A. Judson (1996), "The international market for US currency", Federal Reserve Bulletin, October.
Reinhart, Carmen and Kenneth Rogoff (2009a), *This time is different; eight centuries of financial folly,* Princeton University Press.
Reinhart, Carmen and Kenneth Rogoff (2009b), "Growth in a time of debt", American Economic Association, Papers and Proceedings, forthcoming.
Tavares, J. (2003), Does Right or Left matter? Cabinets, Credibility and Fiscal Adjustments, Universidade Nova, Lisbon
Wagschal, U. and Wenzelburger, G. (2008), *Successful Budget Consolidation: An international Comparison*, Guetersloh: Verlag Bertelsmann Stiftung

Willem Buiter is Chief Economist of Citigroup. Prior to his appointment at Citigroup, he was professor of European Political Economy at the European Institute of the London School of Economics and Political Science. He was a member of the Monetary Policy Committee of the Bank of England (1997-2000) and Chief Economist and Special Adviser to the President at the European Bank for Reconstruction and Development (EBRD) (2000-2005). He has held academic appointments at Princeton University, the University of Bristol, Yale University and the University of Cambridge and has been a consultant and advisor to the International Monetary Fund, The World Bank, The Inter-American Development Bank, the EBRD, the European Communities and a number of national governments and government agencies. Since 2005, he is an Advisor to Goldman Sachs International. He has published widely on subjects such as open economy macroeconomics, monetary and exchange rate theory, fiscal policy, social security, economic development and transition economies. He obtained his PhD in Economics from Yale in 1975. He is a CEPR Research Fellow.

Ebrahim Rahbari is an Economist in the Global Economics Team at Citigroup. He holds a PhD in Economics from London Business School and a BA (Hons) in Economics and Management from Oxford University. His research focuses on the interaction between macroeconomic drivers and financial market developments and the resulting policy implications, in particular in an international context.