

Sovereign debt and its restructuring framework in the eurozone

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Abstract To compensate for the inflexibility due to fixed exchange rates, the eurozone needs flexibility through a system of orderly debt restructuring. With virtually no room for macroeconomic manoeuvring since the crisis onset, fiscal austerity has been the main instrument for achieving reduction of public debt levels; but because austerity also weakens growth, public debt ratios have barely budged. Austerity has also implied continued high private debt ratios, and these debt burdens have perpetuated economic stasis. Economic theory, history, and the recent experience all call for a principled debt restructuring mechanism as an integral element of the Eurozone design. Sovereign debt should be recognized as equity (a residual claim on the sovereign), operationalized by the automatic lowering of the debt burden upon the breach of contractually specified thresholds. Making debt more equity-like is also the way forward for speedy private deleveraging. This debt–equity swap principle is a needed shock absorber for the future but will also serve as the principle to deal with the overhang of ‘legacy’ debt.

Keywords: monetary union, sovereign debt, contingent debt

JEL classification: F33, F36, G13, H63

I. Introduction

For several reasons, debt is a particularly serious macroeconomic problem in the eurozone. Public debt ratios are high by international historical standards, with no immediate prospect of a significant reduction. Private—corporate and household—debt ratios are either flat or rising. Banks remain fragile and impose a contingent liability on the public purse. The most stressed economies have not had the option of renewing economic growth through exchange rate depreciation and a boost to exports. Thus, fiscal austerity has been their principal instrument to achieve debt reduction. But since austerity also hurts growth, the debt ratios have barely budged. Persistent low growth has also created deflationary tendencies, which further raise the challenge of debt reduction.

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The presumption going into this crisis had been that markets would tolerate high debt burdens in advanced economies, as has been the case for Japan. But that presumption has been belied for the eurozone economies. The risk premia required on eurozone sovereign debt have come down from extraordinary levels, but the interest rates presently being paid are high for many, and for some they are well above (the optimistic) projected GDP growth rates. To make a serious dent in debt ratios, austerity will need to be substantial and sustained. Thus, with no immediate prospect of an external demand stimulus, growth will remain persistently anaemic with long-term damage to growth potential. The risk is clear: the eurozone may be trapped in a high-debt–low-growth trap.

The eurozone faces two questions: what should be done about the existing (so-called ‘legacy’) debt and, assuming that the present problems are resolved, what can be done to limit the re-emergence of debt problems. The history of recent crises favours a concerted effort to restructure the legacy debt. Absent such an effort, the vulnerabilities will persist.

In addition, a forward-looking approach to debt restructuring is needed. In choosing to forgo exchange rate flexibility, the eurozone constrained its macroeconomic options and is, therefore, exposed to recurrent debt and financial crises. This conclusion arises essentially from the operation of the so-called macroeconomic financial ‘trilemma’. An economy with a fixed exchange rate that experiences a sudden drop in demand does not have the option of expeditiously depreciating its nominal and (hence) real exchange rate. Lacking that adjustment mechanism, such an economy faces the risk of loss of confidence, capital outflows, and higher interest rates, which feed back into further depressing the domestic economy. Where otherwise there may have been a speculative attack on the exchange rate, the speculation will focus on the rise in interest rates, elevating the risk of a financial crisis. This tendency for real interest rates to experience large swings—with potential overshooting on the downside and the upside, causing a particularly acute tendency for booms and busts—has been well understood not only in the emerging markets literature (Lahiri and Vegh, 2003) but also in interpreting the breakdown of the European Monetary System in 1992 (Svensson, 1994).

To limit such swings, a credible debt restructuring mechanism is needed. The only way to achieve credibility is through debt contracts that embed automatic reduction of debt burdens once the debt ratio crosses an agreed threshold. For example, the contract could specify automatic extension of repayment durations when the debt-to-GDP ratio reaches an agreed threshold. Such contracts would ensure the orderly and timely reduction of debt by eliminating the *ex post* decision to restructure and the inevitable policy-induced delays in restructuring. That, in turn, will lower the risk of the initial shock morphing into an engulfing debt, banking, and growth crisis. A desirable feature of the contracts is that, by the pricing of the subsidy due to the current presumption of bailouts, the more expensive debt would reduce the tendency for over-indebtedness. This proposal for sovereign ‘cocos’ (contingent convertibles) is very much in the spirit of the growing regulatory requirement that banks hold contingent bonds convertible into equity when their equity ratios fall below an agreed threshold.

Why do we need such a radical innovation in sovereign debt contracts? To answer that question, it is helpful to step back into the history of crises. By 1987, 5 years after the start of the Latin American debt crisis, scholars and policy-makers were engaged in an active debate on the scope and form of needed debt restructuring. Modest restructuring of public debts, mainly through extending the duration of repayment, had proven insufficient. Then, as now, high debt levels coexisted with constrained growth opportunities.

Feldstein (1987) favoured a ‘muddling through’ approach, one that involved private voluntary deals with the creditors. Fischer (1987) pointed to more radical possibilities, and Sachs (1990) concluded that the time for more radical approaches had come. The Brady Plan, instituted in 1989, achieved a substantial lowering of debt burdens, which proved essential to renew growth opportunities in Latin America.

Barkbu *et al.* (2012) argue that after the Latin American debt crisis, as global capital flows grew to levels not seen in the post-war period, policy-makers became more reticent in imposing losses on private creditors. The fear of contagion and the perception of challenges in coordinating dispersed bond-holders were among the reasons for this shift in attitude. Instead, distressed sovereigns received increasingly higher levels of official funding. Such funding was intended to enable repayment of private creditors while the sovereigns undertook economic adjustment to regain an independent ability to honour their debts. The strategy worked well for the Mexican tequila crisis and the Asian crisis. Sharp exchange-rate depreciations and strong world economic growth allowed for so-called V-shaped economic recoveries and the risk of crises quickly faded. But later in the 1990s and the early 2000s, the debt burdens proved too high for some; Russia, Uruguay, and Argentina were prominent instances of sovereign debt restructuring.

The eurozone crisis was, at least implicitly, treated as an East Asia-like crisis. Although debt ratios were substantially higher than in all prior post-war crises, debt restructuring was not viewed as a primary option. Instead, the trend towards greater reliance on official financing and fiscal adjustment was taken to a new level of intensity. The size of the financing packages and the degree of fiscal adjustment pursued were unprecedentedly large (Barkbu *et al.*, 2012; Pisani-Ferry *et al.*, 2013a; and Eichengreen *et al.*, 2013). In retrospect, there were four reasons for rejecting debt restructuring. The first, once again, was the risk of financial contagion. Second, the technicalities of debt restructuring are also thought to have restrained the authorities, although, as Buchheit *et al.* (2013) highlighted, such impediments were largely surmountable. Third, the premise was that the eurozone economies were institutionally strong and, as such, would quickly resume growth, which would defang the debt crisis. Judging by the International Monetary Fund (IMF)’s *World Economic Outlook* of April 2010, the expected sources of growth were both domestic and international, with world trade growing at a smart clip. But there was a serious misreading of the depth of the linkages between fragile banks, public debt, and economic growth prospects. Finally, the costs of the delays in restructuring were underestimated. When the Greek debt was ultimately written down, debt ratios were astronomically high and Greek banks and the rest of the economy had been trapped in depression-like conditions. The wait in Cyprus until bank credit reached the astonishingly high level of about 900 per cent of GDP made the costs of haircuts on large bank depositors—and ultimately on the Cypriot economy—also dismally large (see Miller and Thomas, 2013).

A few voices did call for debt restructuring early on. The inevitability of Greek debt restructuring was evident to many non-official observers and the costs of delays were highlighted, in particular, by Lee Buchheit. The official position between late 2009 and early 2011 was that Greek debt was sustainable. But by late 2010, even in official circles there was a growing sense that all was not well. Chancellor Angela Merkel of Germany and President Nicolas Sarkozy of France agreed at their Deauville summit in October 2010 to a forward-looking debt restructuring process. After 2013, financial assistance to sovereigns from the European Stability Mechanism (ESM) would require losses

imposed on their private creditors. Following the bilateral Deauville agreement, this principle was adopted by the European Council.

The European Council decision, however, was vague and open-ended. Consequently, [Gianviti et al. \(2010\)](#) offered a proposal that built on Anne [Krueger's \(2002\)](#) Sovereign Debt Restructuring Mechanism (SDRM). In 2002, then First Deputy Managing Director of the IMF, Anne Krueger, had proposed an approach towards the orderly, predictable, and rapid restructuring of unsustainable debt. In her summary, [Krueger \(2002\)](#) had emphasized that delays to debt restructuring were costly for all parties concerned and unfair to several debt-holders.

There is a fundamental practical problem with such debt-restructuring proposals. The policy instinct in the midst of a crisis is that restructuring is a good idea but not while the crisis is raging. The position is that a system of transparent rules needs to be established during calm years and be applied to forewarned investors during crises. But during the calm years, the interest in restructuring is hard to sustain, as the fate of the original Krueger proposal demonstrates. By induction, therefore, debt restructuring is never established policy. The Krueger proposal offered the prospect of streamlined debt restructuring; but because it did not create a binding commitment, it did not address the instinct to defer.

Thus, the history of the last two-and-a-half decades of crises has forged a view and practice of debt restructuring that is directly contrary to the eurozone's needs. An overhaul is needed, with benefits beyond the eurozone. The framework I describe in this paper shifts the focus from *ex post* restructuring to *ex ante* contractual commitments to reduce the net present value of debt. As a framework, it only points to the general direction of needed change; creating a new form of debt contract would require significant policy and legal investment. With all such proposals, there is ground for scepticism since establishing new paths is always challenging. [Eichengreen \(1991\)](#), for example, describes the sorry track record of globally motivated debt restructuring proposals during the inter-war years. The reason for offering the proposal in this paper is that the eurozone debt restructuring could occur on an unprecedented scale and, looking ahead, given the exchange rate inflexibility, debt restructuring must be integral to a stable eurozone. The premise is that it will eventually be in the self-interest of the eurozone to have a robust policy—one that could set a precedent for others to adopt.

The essential idea underlying the framework proposed in this paper follows from [Sims \(2001\)](#), who argues that debt itself must be the buffer to debt shocks. For countries with their own currencies, sovereign debt denominated in local currency (fiat debt) is like equity issued by private firms. Inflation erodes the value of debt (creating automatic partial default), serving an efficient function. When surprise shocks increase the debt burden, austerity (through reactive changes in taxes and expenditures) generates higher economic costs than imposing automatic default on creditors. In this sense, debt denominated in nominal terms is a superior shock absorber than other fiscal responses.

In the gold standard countries, where the inflation option was not available, maturity extensions were enforced when the debt burden reached excessive levels ([Sims, 2001](#)). [Eichengreen \(1991\)](#), moreover, notes that countries chose to go off the gold standard for periods of time to depreciate their currencies and stimulate their domestic economies. Despite recent orthodoxy to the contrary, history is quite clear: creditors expect and learn to accommodate partial default; the theoretical underpinnings of equilibrium default cycles have most directly been explored by [Kovrijnykh and Szentes \(2007\)](#). The eurozone has cut itself off from all shock-absorbing options: exchange rates have been

‘irrevocably’ fixed and the range of plausible inflation is insufficient to play its traditional role (indeed, the debt crisis may be amplified by deflation). Debt recontracting is the only vent, now and in the future.

The task is to make debt recontracting a less dramatic event. Sovereign cocos, by rendering debt more equity-like, move us in that direction. They can also help create a unified framework for reducing the debt overhang throughout the economy. In the private sector, debt–equity exchanges are more conventional and straightforward; they can be used both for banks’ liabilities and their assets.

The proposed approach may be seen as an extension of other reform proposals. Other proposals rely on making it easier to renegotiate the repayment amounts and schedule. That, for instance, was the intent of the Deauville Agreement. Lee Buchheit has designed methods for diluting the rights of creditors at the time of needed debt restructuring (Buchheit, 2011, and Buchheit *et al.*, 2013). While these approaches seek to achieve the same objective as I set out, their tactics and implementation strategies differ in two ways. First, because they lack automaticity, every occasion for debt restructuring creates its own sense of crisis, including the trotting out of discredited claims on the costs of debt restructuring. Hence, inevitably there are delays, which are costly. Second, the exact timing of the restructuring—and the negotiating position of various creditors (including their political sponsors)—creates arbitrariness and inequity in the distribution of losses.

The paper begins by discussing the nature and extent of the debt problem in Europe, including the fiscal response to rising debt ratios. It then describes the eurozone’s ‘war of attrition’ in choosing between more private debt restructuring and official debt forgiveness. A theme of this section is that each country situation has been treated as *sui generis* and hence the decisions have been reactive and *ad hoc*. The serious consequence is that official debt, having been used to repay private creditors, has tended *de facto* to be relegated to a junior status *vis-à-vis* private debt. Next, using the bond market’s reaction to policy decisions during the course of the crisis, I find that fears of adverse market reaction against debt restructuring are overstated—and that financial markets would welcome a reasonable but clear restructuring policy. In the final two substantive sections, I outline the economic principles that lead to treating sovereign debt as equity and then illustrate the principle through several examples; in doing so, I highlight the need for supportive institutional and practical innovations. At their core, these ideas provide for a credible return of the European Monetary Union to its foundational principle of a no-bailout policy.

II. The eurozone’s debt problem

A public debt-to-GDP ratio above 100 per cent in an ‘advanced’ economy places it in the top 15 per cent of the debt-ratio observations recorded in the last 150 years (IMF, 2012). The global financial crisis that started in 2007 jolted debt ratios above that salient threshold in several countries. Nowhere is this more so than in the eurozone, where the number of countries above or near this threshold is large and growing. The consequence also is that the debt ratios in the eurozone are much higher than in financial crises of the last 30 years. Those previous crises were centred in emerging economies, where the debt was predominantly owed to foreigners in foreign currency and the debt ratios were typically below 60 per cent of GDP (Reinhart *et al.*, 2003).

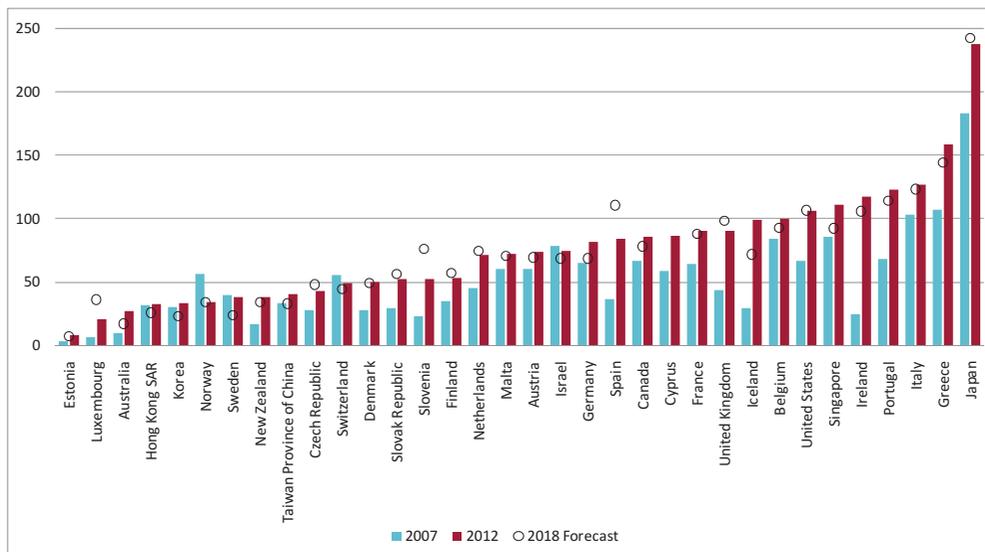
The eurozone's response to its high (and still rising) debt levels has been fiscal consolidation ('austerity'). But despite vigorous efforts, as the crisis has morphed into the Great Recession—or, more accurately, into the 'Lesser Depression'—the challenge of restoring debt to more manageable levels has proven frustratingly elusive. This is not a surprise. The *IMF (2012)* analysis documents that fiscal consolidation works to lower public debt ratios only when complemented with either stimulative domestic policy (which depreciates the exchange rate) or strong external demand. Neither of these supporting factors is at present an option for the eurozone.

But it gets worse. While some part of the public debt reflects costs incurred to stabilize domestic banks, the task of resolving banking problems is far from finished. Banks throughout the eurozone remain in varying degrees of distress and create significant contingent liabilities for their governments. The central importance of banks arises not just because they create a direct financing burden for governments, but also because weak banks contribute to weakness in output growth and limit the options for reducing the private debt overhang (e.g. underwater mortgages). This three-fold link between public debt, distressed banks, and an anaemic non-financial private sector is, in principle, present in all crises, but it is particularly severe in the eurozone. In the grip of this dynamic, the most vulnerable countries create a drag on other European economies. And with Europe slowing down, the drag extends to the world economy—Europe's internal problems are no longer its own.

Faced with this challenge, European policy-makers had three choices: restructure private debt ('burn the bondholders'), offer highly concessional official finance to the distressed economies, or rely on fiscal austerity. The initial approach pursued was an almost exclusive reliance on austerity; even where the limits of austerity became clear and the other options became inevitable (especially the increasing reliance on concessional official debt), the commitment to austerity has remained. Estimates of a fiscal solvency equation, which relates the primary fiscal balance to public debt ratios and the output gap, confirm that in the face of a severe and protracted downturn, the countries of the eurozone pursued a fiscal policy that was aggressively directed to a reduction in primary fiscal balances to control public debt ratios; this implied that scope for countercyclical fiscal support was much more limited than in other advanced economies. In combination with high fiscal multipliers, the outcome was slower growth and, hence, little dent in the public or private debt ratios.

(i) Debt ratios

The public debt-to-GDP ratios have increased across all advanced economies since the so-called subprime crisis erupted in the United States in 2007 (*Figure 1*). The escalation of the debt problems in the eurozone, however, stands out. Four of the six countries in the midst of the persisting European crisis—Greece, Ireland, Portugal, and Italy—have public debt-to-GDP ratios that are already above 100 per cent of GDP. The Spanish debt-to-GDP ratio in late 2012 was still in the 90 per cent range but is projected to rise above 100 per cent by 2018, and such is also the case with Cyprus. Elsewhere in the eurozone, Belgium has remained largely insulated from the sense of crisis, despite a debt ratio of over 100 per cent. France is headed towards that same threshold, and even the German public debt ratio is over 80 per cent. Both Belgium and France have

Figure 1: Trends in public debt ratios

Source: International Monetary Fund, *World Economic Outlook*, April 2013.

episodically moved in and out of the market's radar screen. If Italian debt were to be perceived as unsustainable, Belgium and France would likely be considered vulnerable.

A view exists that advanced economies are different: high debt ratios are less serious, some claim, than for emerging economies. IMF (2012) claims that despite their much higher debt-to-GDP ratios, advanced country defaults over the past nearly two centuries have been rare and not relevant for current conditions.¹ This ignores temporary suspensions of payments in the interwar years by some gold standard economies (Bordo and Kydland, 1990; Eichengreen, 1991). A particularly unfortunate statement on the insulation of advanced economies from debt default is from another IMF study (Cottarelli *et al.*, 2010), a statement made just months before the Greek default. Several analysts had seen the writing on the wall (Calomiris, 2010; Zingales, 2010; Buiter and Rahbari, 2010).

In the eurozone, the severe instability consequences arose in large part because banks and sovereigns were quickly joined at the hip (Mody and Sandri, 2012). Indeed, the overleveraged eurozone banks were arguably at the centre of the crisis from where the sovereign debt crisis unfolded. Greece was different in this respect (in as much as the problems started with the sovereign), but in all countries (including in Greece) the sovereign and domestic banks were intertwined, with governments bearing the implicit responsibility for banks' debt. These sovereign–bank links have heightened the crisis, raising its intensity and prolonging its length. Any analysis of eurozone debt must be mindful of the joint dynamics of public and bank debt.

¹ 'Among our 26 episodes, only 3 feature default: Germany (1918), which suspended war reparations in 1932, and Greece (1888, 1931), which defaulted in 1894 and 1932, respectively. These episodes have little relevance for the challenges faced by advanced economies today' (IMF, 2012, p. 106).

A further vicious loop may be operating in the eurozone. A step-up in economic growth is the only sustainable route to debt reduction. But high debt levels have operated through various channels to limit growth possibilities. First, efforts to reduce public-debt ratios through fiscal austerity have had virtually no success since austerity curtails growth. Second, recent studies on debt and deleveraging show that private deleveraging has moved very slowly in the eurozone relative to the pace in the United States (Figures 2(a) and (b), and Roxburgh *et al.* 2012). Indeed, according to the latest available data, eurozone household and corporate debt ratios were still rising in 2011, while in the US these ratios were falling for households in most states and were flat for corporates. In the US, despite delays in implementation, debt forgiveness has allowed households some respite.² Third, eurozone's overleveraged banks with weak balance sheets must dispose of assets (possibly at fire-sale values) before they are able to lend again. Low growth, in turn, further erodes banks' asset values and pushes up public debt ratios. Together, then, low growth and high debt ratios are likely to persist before some relief is evident.³ The implication also is that financial vulnerability will remain elevated.

How aggressive has eurozone fiscal austerity been? The principal policy for reducing sovereign debt has been the effort to reduce the primary fiscal deficit (the deficit not including interest payments). A simple way to assess how aggressive the primary balance reduction effort has been is to estimate the so-called 'solvency' equations, pioneered by Bohn (1995, 1998). Following Mendoza and Ostry (2007), I report estimates for a panel of advanced economies for the period 1995 to 2013 (where the 2013 data are projections). The estimates correct for autocorrelation. The dependent variable is the primary balance, which is regressed on the public debt-to-GDP ratio at the end of the previous year and on the output gap. All data are from the IMF's *World Economic Outlook*, October 2012. Bohn (1995) has shown that a positive coefficient on the public debt-to-GDP ratio, i.e. a rise in the primary balance as a response to a rise in the debt ratio, implies that the government's intertemporal budget constraint is satisfied and hence debt-to-GDP ratios should decline over time.⁴

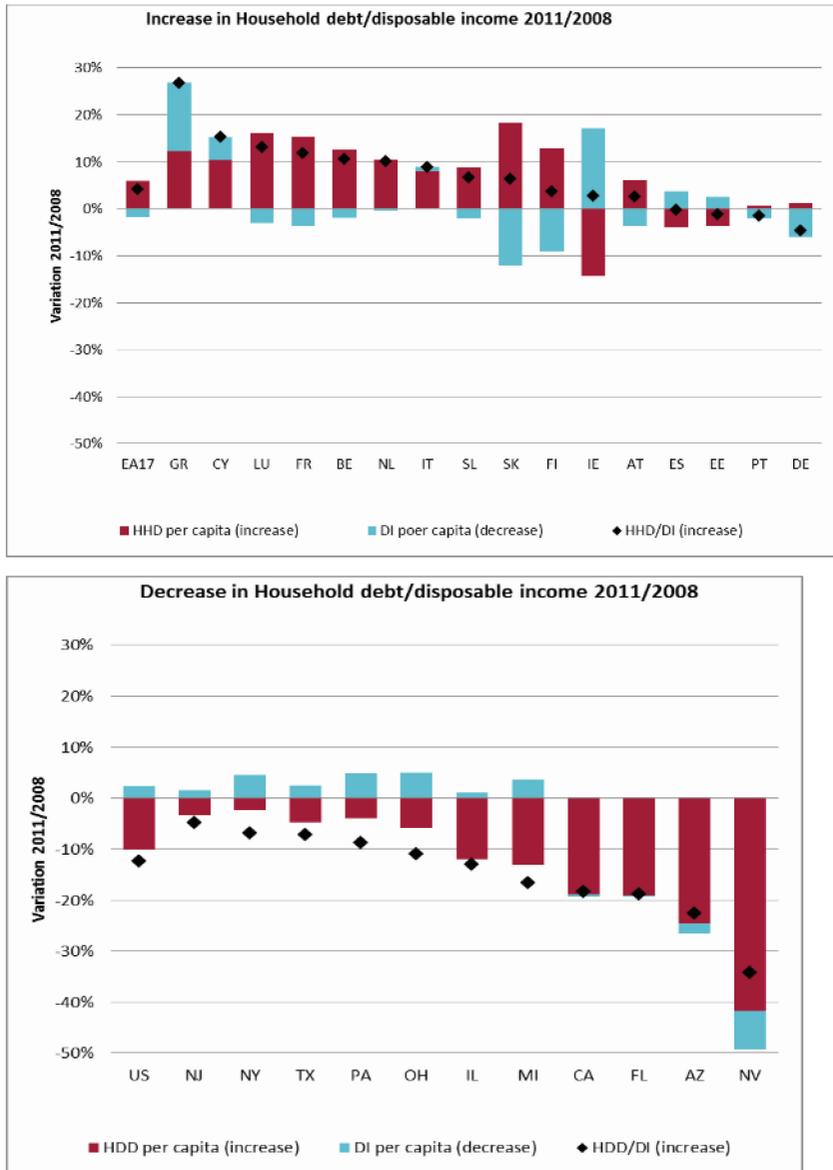
Table 1 shows that during the Tech Bubble phase (1995–2001) the primary surplus response to changes in debt ratios was limited. The primary surplus did move with the business cycle: as the output gap increased (output rose relative to potential), primary surpluses increased (due to higher tax revenues and reduced support for unemployment and other cyclical benefits). There was somewhat greater response to debt ratios during

² Irish households have increasing arrears on their mortgages. Some see this as a sign of 'strategic default'. There may be an element of that; but what is surprising is the low level of arrears in other countries, which is not credible. Similarly, recent reports show that Irish small and medium firms are falling behind on their payments to banks. Once again, this makes sense—an economy in which GDP is still almost 10 per cent below its peak output level and with unemployment in the 14 per cent range (and massive hidden unemployment), distress of the non-financial sector is to be expected.

³ At a press conference in January 2013, to the question 'Is Europe on the mend?' the IMF chief economist, Olivier Blanchard, responded somewhat helplessly: 'Something has to happen to start growth.' <http://www.irishtimes.com/business/economy/world/imf-cuts-global-growth-forecast-1.1071797>

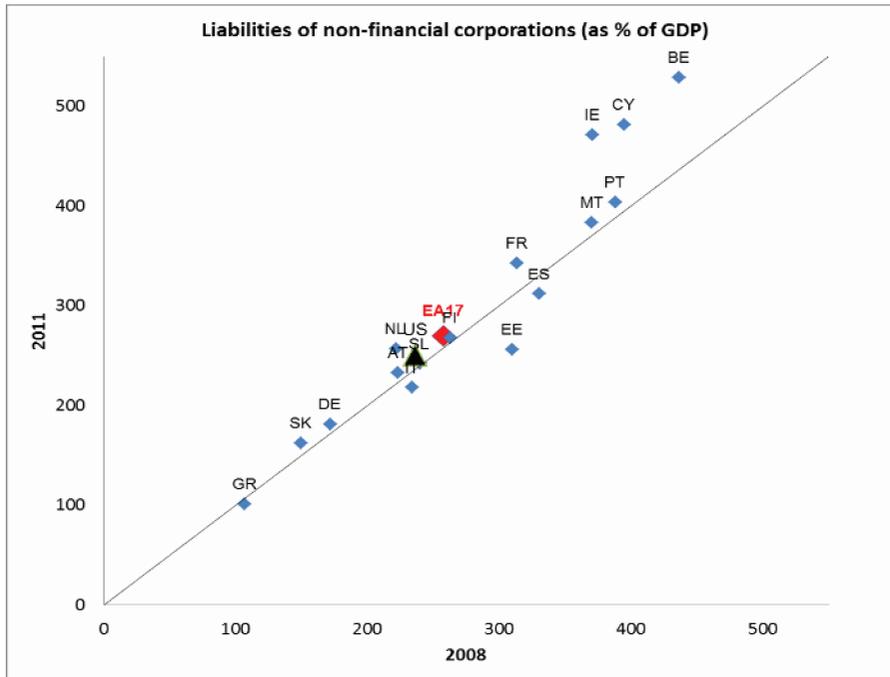
⁴ The eurozone countries in the sample are: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Portugal, and Spain. Slovenia is in the eurozone from 2007, the Slovak Republic from 2009, and Estonia from 2011. The non-eurozone countries include: Australia, Canada, Denmark, Japan, Korea, Netherlands, New Zealand, Slovak Republic, Slovenia, Sweden, United Kingdom, and United States.

Figure 2(a): Household debt/income ratios: eurozone vs United States



Notes: HDD/DI shows percentage change in the household debt over disposable income ratio (the word increase indicates that positive numbers show an increase in the HDD/DI ratio). The percentage change in the HDD/DI ratio is decomposed between percentages changes in HDD *per capita* and changes in DI *per capita* (the word decrease indicates that the variable is inverted, positive numbers mean a decline in disposable income *per capita*). All variations are calculated as logarithmic approximations.

Sources: Eurostat, Bureau of Economic Analysis, and Federal Reserve Bank of New York.

Figure 2(b): Corporate debt/GDP ratios: eurozone countries and United States

Sources: Eurostat and Board of Governors of the Federal Reserve System.

the Greenspan Put era (2002–7) and a somewhat lower response to the business cycle (possibly indicating that the governments were assuming that the good times would last but were also paying down debt).⁵ Once the Great Recession (2008–13) started, debt ratios rose sharply and primary deficits rose. Thus, the economic slowdown made fiscal positions much more challenging, but the need to pay down debt became more urgent. This trade-off essentially implied a pacing of the fiscal consolidation and we see, in Table 2, that it was treated very differently in and out of the eurozone.

Notice in Table 2 that, for the eurozone, the Great Recession was associated with higher elasticity of primary surpluses to the output gap relative to the Greenspan Put period (as indicated for the full sample in Table 1): actual output being considerably less than potential, primary surpluses tended to fall sharply. Conditional on the output gap, the response to debt during the Great Recession period was large in the eurozone: it was much larger than in the non-eurozone countries (where actually the ratio fell) and it was larger than its own ratio in the Greenspan Put era.

These estimates show that the eurozone took the debt reduction business much more seriously than did the non-eurozone economies. That may have been because of the higher debt ratios in the eurozone, with fiscal consolidation viewed as the primary solution to these growing debts. To be clear, these equations are also saying that the strategy worked, in as much as the austerity would act eventually to lower debt-to-GDP

⁵ The Greenspan Put era refers to the idea that the US Federal Reserve under the chairmanship of Alan Greenspan was prone to reduce interest rates to maintain a floor on stock prices.

Table 1: Fiscal solvency estimates: all advanced economies, 1995–2013

	(1)	(2)	(3)
	Tech Bubble (1995–2001)	Greenspan Put (2002–7)	Great Recession (2008–13)
Public debt-to-GDP ratio	–0.00 [–0.22]	0.04*** [3.17]	0.09** [2.12]
Output gap	0.47*** [3.59]	0.24*** [6.21]	0.40*** [5.30]
Constant	2.18 [1.52]	–2.23** [–2.60]	–8.34** [–2.51]
Observations	114	131	142
R-squared	0.200	0.173	0.188
Number of countries	21	23	24

Notes: Dependent variable: primary fiscal balance/GDP; t-statistics in brackets; *** p<0.01, ** p<0.05, * p<0.1.

ratios. But as recent analysis has also shown, there were consequences. Fiscal multipliers proved to be much higher than anticipated (Blanchard and Leigh, 2013); multipliers tend to be high when output is barely growing (Baum *et al.*, 2012) and the consequence, at first, is an increase in debt-to-GDP ratios (Eyraud and Weber, 2013). The short-term rise in debt ratios is aggravated if an attempt is made to further hasten fiscal consolidation, to achieve it in one sustained drive. But, as Blanchard (2013) notes, the real problem arises from the long-term effects of prolonged fiscal consolidation. He refers to various ‘vicious cycles’ setting in—an increase in long-term unemployment and persistent fall in investment that reduce the economy’s growth capacity.

III. No bailout: the eurozone’s war of attrition

Dealing with the debt overhang in the eurozone should have been a simple matter. The monetary union was constructed on the ‘no bailout’ principle—sovereigns unable to repay their debt would negotiate reduced payments directly with their creditors. But the principle was quietly abandoned when it was put to the test. Instead, a series of reactive and *ad hoc* responses followed as the crisis unfolded. It was reactive in the sense that debt restructuring was seen as a last-resort option; it was *ad hoc* in the sense that each event was treated *de novo* and its uniqueness was emphasized. After nearly 5 years of crisis management, no general principle has emerged as an alternative to no bailout. While the choices in dealing with ‘legacy’ debt (the debt stock from this ongoing crisis) are narrowing, the future course of eurozone debt policy remains as unclear as ever.

The counter to such a rear-view mirror recommendation of more debt restructuring early on is that the threat of contagion was large in the eurozone context. In particular, banks would have become even more vulnerable if haircuts were imposed on their holdings of sovereign debt. The threat of contagion is always difficult to deny. But the evidence in other contexts and in the eurozone crisis suggests strongly that markets recognize the strength of different balance sheets (Bordo and Schwartz (1999), Bordo and Murshid (2001), and especially Forbes (2012), who analyses contagion within the eurozone economies and concludes that countries with highly leveraged financial

Table 2: Fiscal solvency: how the euro area responded to the Great Recession

	(1)	(2)	(3)	(4)
	Euro nations: Greenspan Put (2002–7)	Euro nations: Great Recession (2008–13)	Non-euro nations: Greenspan Put (2002–7)	Non-euro nations: Great Recession (2008–13)
Public debt-to-GDP Ratio	0.06*** [4.72]	0.14*** [3.23]	0.04* [1.93]	−0.01 [−0.21]
Output gap	0.16* [2.07]	0.53*** [5.35]	0.36*** [9.88]	0.35*** [10.37]
Constant	−2.80** [−2.84]	−11.57*** [−3.32]	−2.33** [−2.35]	−2.13 [−0.76]
Observations	66	80	65	62
R-squared	0.0932	0.295	0.298	0.208
Number of countries	12	14	12	12

Notes: Dependent variable: primary fiscal balance/GDP; t-statistics in brackets; *** p<0.01, ** p<0.05, * p<0.1.

institutions are vulnerable to external shocks but the evidence for ‘wake up call’ contagion—that due to perceived similarity—is weak). Instead, markets prefer the certainty of debt restructuring to the uncertainty of an *ad hoc* process with no imminent resolution of the underlying debt problem. Where contagion nevertheless surfaces, monetary authorities have the tools to aggressively defend ‘innocent bystanders’ (Blinder, 2013).

In this section, I interpret eurozone crisis management as a ‘war of attrition’. Abandoning the euro is too costly but moving ahead with a more complete union is politically infeasible in the timeframe of the current crisis. If default on private debt is deemed an instrument of last resort, the only escape from a prolonged state of crisis is the elixir of growth. That elixir not having materialized, the strategy of large official financing, along with fiscal austerity as the main adjustment tool, is creating its own anomalies. In particular, official debt is being unwittingly subordinated to private debt, generating serious long-term risks. In Cyprus, this process was pre-empted before bank debt transformed into sovereign debt. Large bank depositors are being converted into equity holders. Since the bank debt had *de facto* become sovereign debt, the adaptation of these principles to sovereign debt would appear to be the next step.

The contradictions in the eurozone’s sovereign debt policies can be traced to the two different ways the phrase ‘no bailout’ has been used.⁶

- Public-to-public bailouts. Articles 123 and 125 of the Treaty on the Functioning of the European Union (TFEU) prohibit these. No European sovereign, the European Union, or the European Central Bank (ECB) may ‘bail out’ a member state. This—the official no bailout—is a legal injunction against assuming the financial liabilities or commitments of other governments.

⁶ Although the IMF was involved in this process, I do not treat the IMF voice as a distinctive one. The public views of the IMF were consistent with those of the European authorities (e.g. Cottarelli *et al.*, 2010). The March 2011 Staff Report on the third review of the Greek programme concluded that Greek public debt was sustainable in the ‘baseline scenario’ (IMF, 2011a, p. 10). While the report noted the risks, it also interpreted economic developments and policy decisions taken as signs of progress. Recently, the IMF has issued a *mea culpa*, suggesting after all that not restructuring Greek debt early on was an error. But other voices from the IMF continue to believe that the right course was adopted: <http://www.brettonwoodsproject.org/art-572642>

- Public-to-private bailouts. Private creditors are said to have been ‘bailed out’ if they are paid their dues in full, in part by borrowing new money from official sources. Thus, private no bailout (or, equivalently, private ‘bail in’) occurs when the sovereign defaults on the debts owed to private creditors. Enforcing no bailout on private creditors is a policy decision, not a legal requirement.

The official and private no-bailout decisions are logically and practically connected. Fidelity to the official no-bailout legal requirement requires adherence to a private no-bailout policy. If official no bailout were strictly applied, sovereigns in distress would be unable to fully repay their privately held debt and the creditors would suffer losses. For this reason, the policy decision to repay private lenders required official financing of distressed sovereigns, diluting the official no-bailout principle. But such dilution strikes at the treaty commitment, which undermines the core principles on which the monetary union was founded.

The interconnections extend further. If the threat of imposing losses on private creditors were rendered credible by adherence to the official no-bailout commitment, private creditors would have a greater (though not iron-clad) incentive to discipline sovereign borrowers, and the likelihood of sovereign distress and the need for official bailouts would fall. Sovereigns would tend to pay higher interest rates and borrow less, resulting in a logically consistent and more stable equilibrium than is presently the case. Instead, the effort has been to square the circle of enforcing ‘no official bailout’ while approving private bailout. Severe fiscal austerity has been the outcome.

Because of these tensions, the eurozone authorities have walked a tightrope in dealing with the two ‘no bailouts’. Early on, starting with Greece, the decision was to make private creditors whole. Since that required substantial official funding for distressed sovereigns, new official financing mechanisms were set up. Whether the funding channelled through such mechanisms violates the no bailout required by the TFEU has been a continuing source of angst. Whelan (2013) argues that lending to other sovereigns may not violate the treaties and although the courts have been cooperative in this regard, the officials themselves regard the legal position as blurred. This is particularly so as the terms on official lending are being necessarily eased for fear of aggravating the debt burdens of the distressed sovereigns, and such easing has to be justified as being in compliance with the legal no-bailout requirement. At the same time, as the costs of such concessional finance are being revealed, the issue is acquiring greater political salience and the willingness by creditor governments to provide open-ended official funding is being tested, resulting in episodic and opportunistic losses imposed on private creditors. Three examples demonstrate the problematic conflicts and uncertainties that have resulted.

(i) Three examples

Consider first the dreadful euphemism ‘official sector involvement’ (OSI). This refers to the various forms in which the terms of official lending are being eased. The most widely known example is the extension of maturities in Greece. Substantial official funds were at first used to repay private creditors under the assumption that Greek debt would be sustainable—Greece would repay all its debt including official loans. When that assumption proved invalid, a belated effort was made to bail in the remaining

private creditors. That proved too little, too late, besides being grossly unfair. Following a publicly conducted debate, the decision was to stretch out the repayment of Greece's official debt repayment obligations with the goal of lowering its debt-to-GDP ratio to about 120 per cent about a decade from now. Given the sorry track record of macro projections in the first 2 years of the Greek programme, the claim that Greece would hit that precise debt ratio several years down the line was a political outcome rather than reflecting credible economic analysis. Even if the target were miraculously achieved, it is highly improbable that debt at that level would be sustainable. More official forgiveness will be needed but will be dragged out over several years. The legal and political barriers continue to prevent decisive debt reduction needed to allow Greece a reasonable opportunity of regaining control over its own economic future.

An important subsequent decision was to allow Ireland to repay its obligations under the so-called 'Promissory Notes' over an extended time period. With less fanfare, but in fairness to the other recipients of official financing, there has been significant cumulative reduction in the Irish and Portuguese debt burdens through extended maturities and lower interest rates. OSI has become integral to the resolution of the eurozone crisis.

Is OSI consistent with the no-bailout injunctions of the TFEU? The European Court of Justice (ECJ), in the so-called Pringle decision, concludes that official lending does not violate the no-bailout commitment if it safeguards the financial stability of the eurozone (ECJ, 2012, p. 13). But the same decision adds that the loaned amounts must be repaid with 'an appropriate margin'. Of course, what constitutes an appropriate margin is a policy decision. But for this to be legally consistent, the interpretation must also be that the appropriate margin can change from the original contract to reflect new developments.

In the meanwhile, the President of the Bundesbank, Jens Weidmann, has voiced misgivings publicly on the legality of the Irish Promissory Notes deal (Cahill, 2013). These legal misgivings are real but they confront the inevitability of more OSI for reducing the legacy, unsustainable debt. The legal questions apart, there is a further, possibly unintended but serious, policy consequence. To the extent that OSI reduces sovereign debt burdens and permits renewed private borrowing, as is happening for Ireland and Portugal, official credit will have, in effect, become junior to private credit. The signal to private creditors is that official funds (at possibly increasingly concessional terms) will be used to repay private debt.⁷

A second example refers to the decision by the ESM to lend to the Government of Spain on a *pari passu* basis: in the event of a default, the ESM would have the same rights as private creditors. The ESM (2012, p. 6) reports that normally its loans will 'enjoy preferred creditor status in a similar fashion to those of the IMF, while accepting preferred creditor status of the IMF over the ESM'. In other words, under normal practice, the indebted sovereign will first repay the IMF, then the ESM, and the private creditors would be the residual claimants. The decision to forgo the preferred creditor status in the Spanish case is explained as 'one-off in nature'. By forgoing preferred creditor status, the ESM is, in effect, subsidizing future Spanish borrowing from private lenders. This is yet another form of OSI with similar implications.

⁷ Not surprisingly, President Weidmann has also taken up the cause against the European Central Bank's much-acclaimed Outright Monetary Transactions (OMT) programme for similar reasons.

The final example is from Cyprus. For the first time since the start of the crisis, the availability of official funds was made contingent on the bail-in of private depositors (although this forward step was contaminated by the initial blunder of imposing a haircut on small depositors). If the sums are done right and the rest of the programme holds together, the Cypriot example would help create a better balance between official and private financing. If (a big if), following the bail-in of private lenders, public debt levels are brought down to sustainable levels (or to less unsustainable levels), official funding will stand a higher likelihood of being temporary and thus be broadly consistent with the official no bailout under the TFEU. For this reason, it is intriguing that the officials have been anxious to describe Cyprus as an exceptional case that will not be a basis for future official funding design. In his press conference on 4 April 2013, President Draghi of the ECB was clear: ‘let me stress that Cyprus is not a template!’ (<http://www.ecb.int/press/pressconf/2013/html/is130404.en.html>)

A potentially much more serious muddle relates to the relative seniority of official and private lenders in the context of the ECB’s Outright Monetary Transactions (OMT) initiative (ECB, 2012). Under this initiative, the ECB has accepted the principle of an equal or *pari passu* position relative to private lenders. In its interpretation of the TFEU, however, the ECJ (2012) states that Article 123 (which refers to the ECB) imposes a higher no-bailout standard on the ECB than does Article 125 (which refers to all other official lending).⁸ For the Greek bonds that the ECB held, a prior transaction before the private ‘bail in’ allowed the ECB to avoid sharing the losses with private creditors. Market commentary has noted that the ECB may hold ‘implicit’ seniority (Cotterill, 2012), which, if exercised, would create new uncertainties.

(ii) Some lessons

No official bailout was the treaty obligation, and its corollary, no bailout of private creditors was the necessary and correct policy. The treaty has most likely been undermined, and the policy is beset with uncertainty. The cases discussed illustrate that maintaining the purity of the official no-bailout principle is virtually impossible when sovereign financial distress is significant and official funds continue to provide private bailouts. If the original intent of no official bailout is to be achieved, private creditors must be forced to significantly reduce their claims on the sovereign. An orderly mechanism of sovereign default (including on quasi-sovereign bank debt) needs to be in place.

The *status quo* is untenable. The policy judgement appears to have been that if private creditors were not bailed out, financial contagion would amplify instability. Blinder (2013) reports that when the Federal Deposit Insurance Commission (the FDIC) imposed large losses on the creditors of Washington Mutual (in the largest bankruptcy of a US bank), money market funds were placed under strain. The risk that they would ‘break the buck’ (not honour their commitments) caused widespread panic. The Federal Reserve stepped in as a lender of last resort to dampen the crisis. In the Greek

⁸ As James (2012, p. 477) notes, ‘The involvement of monetary authorities in government finance was ruled out by the stipulations of the Maastricht Treaty forbidding the ECB from purchasing government bonds and the absence of support was a vital part of the “no bailout” philosophy woven into the Treaty (Article 104/1 of the Maastricht Treaty; Article 21 of the ECSB Statute; and Article 104/1 of the Lisbon Treaty).’

case, if similar strains had arisen, the ECB had the resources and the ability to stem the contagion. The question also is whether the alternate strategy pursued—of making creditors whole—better serves the cause of financial stability. For one thing, the policy being pursued is *ad hoc*, verging on arbitrary. Indeed, the authorities are at pains to highlight that each case is *sui generis*, from the Greek private debt restructuring to the Cypriot depositor bail-in. As such, huge policy uncertainty remains. More seriously, the accumulating inference from current practice is that official creditors are willing to subsidize private lenders by accepting either an equal, or even a junior, status as lenders. Ritschl (2012) has written of the damaging consequences of such subordination of official claims in the context of German reparation payments.

IV. Sovereign debt as a contingent claim

In his comment on Reinhart *et al.* (2003), Sims (2003) points out that the accumulation of debt and the ensuing default may reflect symptoms of underlying problems, in which case default can be cathartic. He further argues:

If default occurred cleanly, without costs other than the direct costs to investors who do not receive promised returns and to the borrower who may face higher future borrowing costs, it would be hard to argue that default is in itself a problem. Default in such a world is a way to make debt a contingent claim, and contingent debt is a useful financing tool. In an earlier paper (which the authors cite), I presented a highly stylized model of such cost-free default that predicts many of the statistical associations uncovered in this paper: that poorer countries will default more often; that default is consistent with fairly prompt renewal of borrowing and indeed with real debt quickly exceeding predefault levels; that highly variable inflation rates are associated with high default probabilities; that real debt burdens are seldom reduced rapidly except by sudden defaults or episodes of inflation.

The earlier paper that Sims refers to, Sims (2001), argues that faced with an unexpected fiscal setback, a government has two choices: to raise taxes or engineer a partial default. Where the government issues debt denominated in nominal terms, the real value of debt can be eroded by inflation and the tax rate can be set independently of the current level of debt. Shocks to the fiscal balance are, therefore, absorbed by unanticipated inflation, allowing ‘a less variable and more efficient time path for the tax rate’ (Sims, 2001, p. 603). The inflation tax is akin to a surprise tax on capital, which is non-distortionary. Thus, nominal debt creates a contingent (real) claim, which is also efficient. It is in this sense that Sims describes nominal sovereign debt as more like equity than debt issued by private firms. Even more directly, Cochrane (2005) refers to nominal government debt as a ‘residual claim’.

The surprise inflation tax on nominal debt is automatic, with virtually no costs of administration. But Sims notes that it may not always be the mechanism to implement the contingent claim. For example, he points out (Sims, 2001, p. 607),

At times of fiscal stress, governments under the gold standard would ‘suspend specie payment’, meaning that their liabilities, nominally promising payment in

gold, could temporarily only be rolled over at maturity into new government liabilities. This contingency was not provided for explicitly in advance, but it was easy to implement.

[Bordo and Kydland \(1990\)](#) document such suspensions and describe the gold standard as a ‘contingent rule’, which could be suspended during emergencies and reinstated once conditions normalized.

Another perspective on debt as a contingent claim comes from [Gennaioli *et al.* \(2012\)](#). These authors argue that securities that are deemed to be safe typically contain neglected risks—certain states of the world, certain contingencies, are not reflected in the design and pricing of the security. Because of limits in representing uncertainty, improbable risks are excluded from the calculus. The neglect of risk, [Gennaioli *et al.* \(2012, p. 454\)](#) conclude, leads to over-issuance of securities: ‘there are not enough cash flows in the neglected states of the world to make promised payments in full.’ Financial fragility arises because a small piece of bad news can cause a drastic revaluation of an asset, causing a flight to safety. Fragility is magnified if the assets with neglected risk are held by highly leveraged institutions. The flight to safety then triggers deleveraging with its more far-reaching instability.

The ‘neglected risk’ view is a pithy and precise description of the eurozone crisis. Sovereign debt was regarded as virtually risk-free (a notion fostered by risk-free weighting of sovereign assets held by banks and the similar treatment accorded by the ECB). Hence, sovereign debt was held in substantial amounts by the highly-leveraged euro area banks. When the risk that the sovereigns might be unable to honour their debts became real, the sharp revaluation of the debt caused not only sovereign distress but more extensive financial panic.

The policy prescriptions that [Gennaioli *et al.* \(2012\)](#) advocate also apply in the eurozone context. Issuance of apparently safe securities needs to be curbed, especially if they are associated with guarantees that prove onerous to honour. The corollary is that investors must be subject to more continuous revaluations of their assets, such that default is a more minor, less dramatic event. If this is their advice for money market funds, where the notion of ‘breaking the buck’ has been a taboo, it applies with all the more force to sovereign debt and to the goal of making such debt a contingent claim.

Finally, in the tradition of the sovereign debt literature, [Rogoff \(1999, p. 35\)](#) notes: ‘in multi-period models of sovereign borrowing, it is by no means the case that an efficient contract always calls for full debt repayment in every state of nature.’ This is all the more so, he writes, in the absence of a lender of last resort, when temporary standstills on payments are desirable. The implicit contract between debtors and creditors recognizes the possibility of partial repayment when economic outcomes are unexpectedly adverse. [Grossman and Van Huyck \(1988\)](#) refer to ‘excusable debt’. Like [Sims \(2003\)](#), they point out that default has low costs, notwithstanding its continued popular portrayal as a calamitous event. Thus, [Grossman and Van Huyck \(1988\)](#) emphasize that creditors are realistic about the sovereign’s ability to repay debt in certain contingencies and, for this reason, a reputational equilibrium can be maintained through the sovereign’s choice of current income devoted to debt servicing. Even more directly, [Kovrijnykh and Szentes \(2007\)](#) describe ‘equilibrium’ default cycles. Bad shocks, they note, will lead to debt overhangs (future primary surpluses will be inadequate to serve current debt). It is in the interest of the lender to forgive debt and resume new lending to

take advantage of new investment and growth opportunities in the borrowing economy. This is how the lender will behave, knowing that the cycle will be repeated.

Despite current perceptions to the contrary, the costs of austerity could likely exceed those of default. While prolonged austerity will eventually reduce debt ratios, the persistent growth weakness in the interim causes lasting damage ('the vicious circles', in Blanchard's terminology). In contrast, scholarly analysis across centuries repeatedly finds that default has low costs because creditors allow for expected defaults in their lending decisions and, further, regard forgiveness and new lending to be in their self-interest. Drelichman and Voth (2011) report on serial defaults by Philip II of Spain between 1566 and 1600 and, using detailed archival data on over 400 debt contracts, find that lenders repeatedly agreed to easy and generous debt write-down and early resumption of new lending. They conclude that over these default cycles (much in the manner of the theoretical treatment by Kovrijnykh and Szentes (2007)), lenders made handsome profits. Eichengreen (1991, pp. 160–1) focuses on the widespread defaults in the inter-war period. He finds:

Countries that faithfully serviced their debts in the 1930s did not enjoy superior credit-market access subsequently. . . . Even when lending picked up after World War II, there remained little discernible difference in the capital-market access of countries that had pursued different policies toward their external debts.

Jorgenson and Sachs (1989) examine the same period and reach the same conclusion. Recent studies reaffirm this view. These studies (Panizza *et al.*, 2009; Levy Yeyati and Panizza, 2011; and Panizza, 2013) show that following default, the return to the market is relatively quick; although spreads rise sharply, they fall back quickly; and output losses are negligible (indeed, output starts rising in the quarter after the default). Recently, Cruces and Trebesch (2011) have determined that larger haircuts at the time of default are associated with larger subsequent risk premia and longer exclusion from the market.⁹ Their message is that early, even pre-emptive, restructuring that keeps haircuts in a modest range (under 40 per cent) offers debt relief with limited downside.¹⁰

Why, Eichengreen (1991) rightly asks, are the costs of debt restructuring so low? His answer is that investors have short memories and what really matters is the credibility of the post-default economic policy regime. Thus, countries that defaulted in the inter-war years returned to a commitment to the gold standard and reclaimed standing as responsible borrowers. Jorgenson and Sachs (1989) go one step further and claim—as do Kovrijnykh and Szentes (2007) and Drelichman and Voth (2011)—that default is also in the interest of the creditors. Having defaulted, the borrower's economic prospects improve, and creditors value that return to creditworthiness. Indeed, as Buchheit (2011) and Panizza (2013) emphasize, absent timely implementation of partial default, the delays in containing debt repayment to manageable levels impose large costs on all parties by further undermining repayment capacity and ultimately distributing the burden in an inequitable and arbitrary manner.

⁹ The study is based on 27 events, which include a number of economies that transitioned from centrally planned to market systems in the early and mid-1990s, as also Iraq in recent years.

¹⁰ They do find that higher haircuts are associated with the defaulting borrower having to pay higher spreads. The penalty is between 1 and 2 per cent higher interest rate for 5–7 years when about half the debt is written off.

(i) Which is worse: debt restructuring or the uncertainty?

Do the considerations outlined above apply to this crisis? I use the changes in bond spreads following three debt-restructuring-related policy announcements to infer the market's reaction. The bond spread of a country on a particular date is the risk premium yield it pays on its 10-year bonds over and above the yield paid on German 10-year bonds on the same date. As in [Ait-Sahalia et al. \(2012\)](#), I estimate the 'abnormal cumulative change' in bond spreads after the announcement. The word 'abnormal' refers to the counterfactual: what would have been the change absent the announcement. Since estimating this counterfactual is hard, [Ait-Sahalia et al. \(2012\)](#) use the average change over the past 20 days as the most probable direction of spreads absent the policy change. The cumulative abnormal change is shown over a window of 5 days after the announcement.

Consider first the 19 October 2010 announcement at the Deauville Summit between Chancellor Angela Merkel and President Nicolas Sarkozy. The details of the proposal were never spelled out, but the goal of making restructuring easier by 2013 was to be achieved by more widespread use of collective action clauses (CACs) in bond contracts and restructuring of privately held debt as a condition for receiving official assistance from the ESM. Both these were steps in the right direction. CACs made debt restructuring easier and the empirical evidence suggests that borrowers other than the least creditworthy gain from the reduced risks of restructuring being impeded by recalcitrant bondholders ([Eichengreen and Mody, 2000](#)). Investors like collective action clauses. [Emons \(2012, p. 3\)](#), writing for PIMCO, the giant bond investor, says: 'On balance, the introduction of CACs in European government bond markets in 2013 is positive for investors.' Similarly, debt restructuring before the debt weighs on the economic recovery process is also desirable for the reasons discussed above.

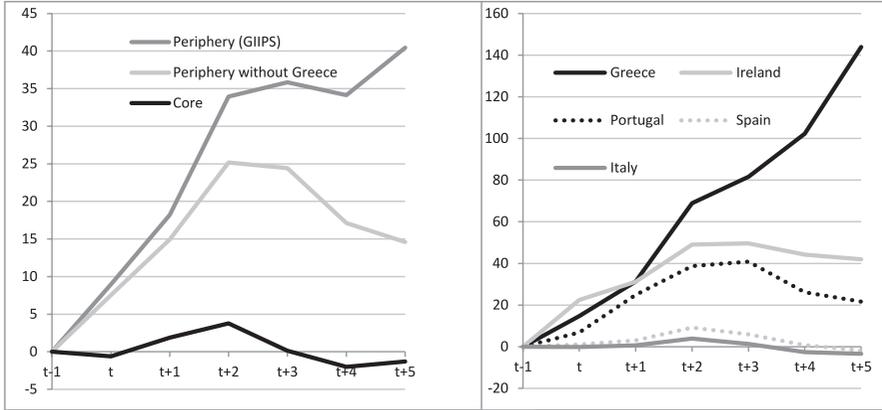
Yet, the Deauville proposal has, almost universally, been regarded as an error, certainly for its timing and also for its content.¹¹ Since nothing in the proposal was novel, except that it was being applied to Europe, the basis for the criticism was the large rise in spreads in October and November 2010. The question then boils down to whether Deauville contributed to that run-up in spreads.

[Figure 3\(a\)](#) shows the abnormal changes in spreads following the announcement. For the periphery economies of the eurozone, the average spread went up about 50 basis points (100 basis points equal 1 percentage point) by the end of the fifth day after Deauville. Much of the rise was accounted for by Greece, where the increase was almost 70 basis points. For Ireland, the peak rise in spreads was 45 basis points; but, importantly, this peak was reached on the third day after which the spread began to decline. Similarly, the peak rise for Portugal was 40 basis points on the third day, after which again spreads fell. The Spanish and Italian rise in spreads was even smaller.

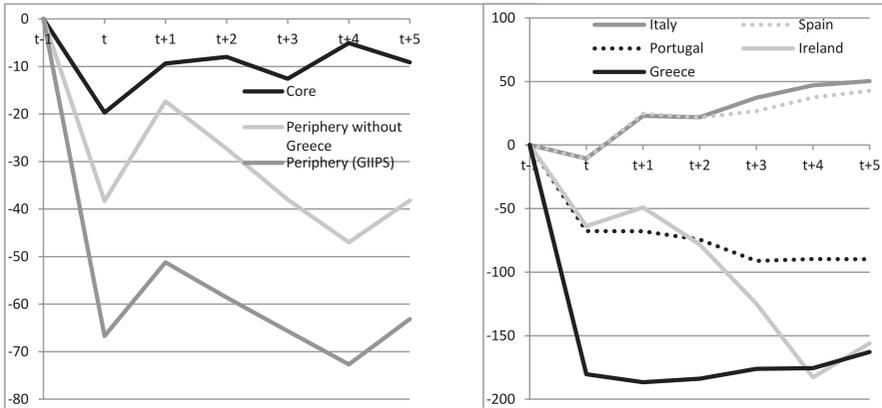
¹¹ It has, therefore, been convenient to blame all ills on Deauville. The IMF's Staff Report for the Fourth Review of the Greece programme, published in early July, 2011, just days before the inevitable debt restructuring, finally conceded that it was no longer possible to say with high probability that Greek debt was sustainable ([IMF, 2011b](#), p. 30). But even in making this circuitous concession, the report could not resist assigning much of the blame for the outcome to Deauville. Incredible. Makes one want to cry out like Cassius in Shakespeare's *Julius Caesar*, 'The fault, dear Brutus, is not in our stars, but in ourselves, that we are underlings.' *Julius Caesar* (I, ii, 140–1).

Figure 3: Sovereign bond market reactions to policy announcements (cumulative abnormal change (basis points))

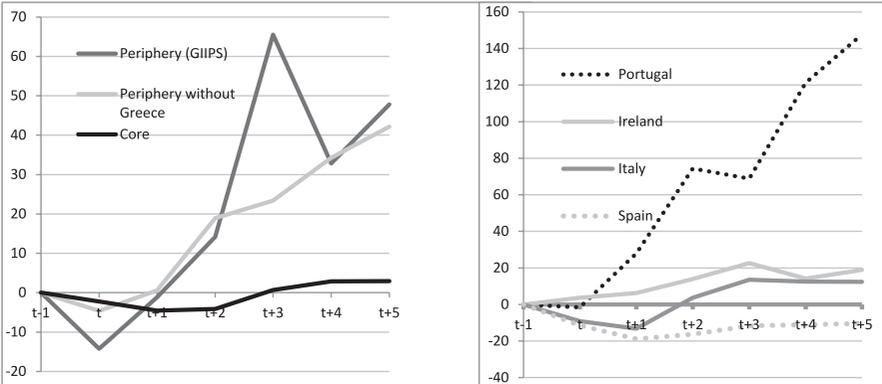
(a) The Deauville Agreement, 19 October 2010



(b) The first Greek debt restructuring, 22 July 2011



(c) Uncertainty about debt restructuring in Greece, 20 February 2012



Not only was the rise in spreads small, it was also well within the range of variability established in the previous 20 days. For example, the standard deviation of the 3-day cumulative change for Portugal was 30 basis points. So, the Portuguese increase in spreads at 40 basis points was just over one standard deviation of the rise in spreads during that period. Put another way, there was at least one 3-day period in those past 20 days when the cumulative rise was above 40 basis points. Thus, the rise in spreads that actually occurred was within the range established by the variability prior to Deauville.

In sum, while spreads did rise in October and November of 2010, attributing that rise to Deauville is inappropriate. If Deauville had been the causal factor, there would have been a stronger movement around that time. In particular, the fall in the abnormal spreads after the third day in Ireland and Portugal implies that Deauville created no decisive break with the past. There was, moreover, no sign of contagion. The relative rise in spread in the first three days reflected the differences in variability across countries: high for Greece, lower for Ireland and Portugal, and even lower for all others.¹²

On 22 July 2011, the announcement of a new Greek bailout programme included the decision to impose a substantial haircut on bond holders. As [Figure 3\(b\)](#) shows, abnormal spreads fell sharply not only for Greece but also for Ireland and Portugal, and the fall was sustained over the next few days. Global stock markets also responded favourably despite the then prevailing uncertainty in the United States. As one market participant commented: 'The latest deal for Greece has come as a relief but the focus is now back on the American deficit problem and the still stuttering economy.'¹³ Thus, a clear statement of intent on debt restructuring helped improve market sentiment.

But the first Greek restructuring proved insufficient. Thus, on 20 February 2012 ([Figure 3\(c\)](#)), a decision was due on the next steps, and it remained unclear what the parameters of the next stage of needed restructuring were.¹⁴ This time, spreads rose. The rise in Greek spreads was so large that it is not shown on the chart. But other peripheral economies also lost ground; Portuguese spreads rose rapidly, and considerably more than they did after Deauville. Thus, if there is evidence for contagion, it manifested itself more starkly in an uncertain context.

Such event analyses do not provide conclusive proof of causality. Nevertheless, the evidence, such as there is, cautions us that the risk of financial instability should not be a deterrent to debt restructuring. The evidence is also consistent with the limited costs to debtors of debt restructuring. The policy message is that lack of decisiveness is the more serious problem.

Deauville was a good first step. It was a recognition that debt will not always be repaid and it was a beginning for establishing mechanisms for lowering the costs of debt restructuring. In particular, a process that related renegotiation of debt contracts to established and transparent benchmarks was very much in the spirit of recognizing debt as a contingent claim. Deauville would have initiated a move away from a reactive

¹² A concern with such analyses is that the Deauville announcement may have been anticipated and so the rise in spreads occurred before the actual announcement. Discussions with key participants at the time suggest that the Merkel–Sarkozy agreement came as a surprise.

¹³ 'The Eurozone Debt Crisis Plan As It Happened: July 22, 2011.' <http://www.telegraph.co.uk/finance/financialcrisis/8654064/Eurozone-debt-crisis-plan-as-it-happened-July-22-2011.html>.

¹⁴ 'Greece's Fate Uncertain as Bailout Talks Drag On.' <http://money.cnn.com/2012/02/20/markets/greece/index.htm>.

stance to debt burdens—dealing with them only when there is no other choice—to a system that was proactive. The decision to go back on Deauville is unfortunate because that decision appears to have been based on a superficial reading of the evidence, a reading that has provided a convenient focal point for the critics of debt restructuring. Moreover, even if the market had, in fact, reacted adversely, the decision to change course was not the logical conclusion. A rise in spreads—if it had occurred—would only have revealed a subsidy on account of an untenable expectation of bailout of private creditors.

V. Contingent debt for the eurozone crisis

Two problems need solutions: the legacy debt and a system for the future. Legacy debt—the ‘debt overhang’—is a problem if its size deters voluntary new lending to the country. Legacy debt, as [Krugman \(1988\)](#) noted, must either be financed by new (possibly official) money or it must be forgiven (restructured). The early presumption in the eurozone was that financing would be sufficient; over time, that has proven untenable, and private and official loans are increasingly (though slowly) being forgiven. Some may argue that this *ad hoc* approach, even if not elegant, is making headway; and with the hard work already behind us, changing course at this stage could be disruptive. An alternative view is that instituting a more orderly and predictable system that encompasses legacy debt is essential because slow and uncertain pace of restructuring is costly; it acts as a drag on investment and growth and leads to a continuing rise in debt burdens. But, as important, the architecture of the eurozone has a major gap without a debt restructuring mechanism and that gap needs to be filled.

For both the legacy debt and for the forward-looking framework, a unified approach is feasible and offers an efficient and fair way to proceed. The unity emerges from viewing debt as an increasingly equity-like instrument, which in the sovereign debt case implies treating it as a contingent claim in the spirit of [Grossman and Van Huyck \(1988\)](#) and [Sims \(2001\)](#). [Krugman \(1988, p. 253\)](#) notes that this is a valid construct also for new financing to tide over the debt overhang (legacy) problem. A unified treatment also creates a system that is also readily applicable to private debt, for which restructuring through debt–equity swaps is more conventional.

For legacy sovereign debt, easing the terms of official loans helps—and it helps all the more if the terms are made truly concessional. At some point, official debt may be, for all practical purposes, written down or, equivalently, made payable very far into the future. This, of course, does not work for sovereigns who have not yet borrowed from official sources. Even for those who have the buffer of official funding, an important concern with the present strategy is the *de facto* subordination of official to private debt. The longer the maturities of official debt, the greater would be the resources available to repay private creditors. If this induces private creditors to lend new money to sovereigns—in the knowledge that these creditors will continue to be repaid—then the overall debt burden will remain high. Under official financing, the option value generated by future growth (or inflation) spurts accrues mainly to private creditors who may be tempted to take more risk. As [Rogoff \(2003\)](#) emphasizes, ‘the availability of IFI [international financial institutions] support gives a false sense of security to investors,

which magnifies booms in the run-up to the crisis (as in Russia in 1998). If the future does not unfold in a favourable manner, the present dilemmas will repeat themselves down the line with, possibly, more severe consequences.

For this reason, a forward-looking discussion of debt strategy is needed. In the rest of this section, I first outline a proposal for new sovereign debt. Then, I suggest how that proposal can be used also to draw down the legacy sovereign debt. Finally, I discuss issues relating to private debt.

(i) Sovereign cocos

[Barkbu *et al.* \(2012\)](#) propose the idea of sovereign cocos, ‘contingent convertible’ bonds.¹⁵ Under this proposal, debt contracts would contain automatic provisions for restructuring whenever the country’s debt-to-GDP ratio exceeded an agreed threshold. The debt-to-GDP ratio has clear economic significance for debt management, is measured with reasonable accuracy, and taking lagged values could also reduce the risks due to data revisions.¹⁶ Upon reaching the threshold, repayment maturities could be extended; but the bonds could also have higher thresholds beyond which the debt repayment could be tied to economic and financial developments. An additional event triggering the change in the terms of repayment could also be the country’s need to seek official financial assistance (as proposed in the Deauville agreement and recently by [Barr and Pienkowski \(2013\)](#)), in which case the automatic restructuring provided will reduce the need for official assistance and, unlike at present, also reduce the aggregate debt repayment obligations. Each country would (for possibly each transaction) negotiate with creditors the debt-to-GDP threshold, the nature and extent of restructuring, and the price of the bond. The automaticity in the debt-restructuring process would eliminate the discussion on whether or not to restructure, reduce the associated delays and costs of restructuring, and thereby lower the risk of financial instability and contagion.

The sovereign cocos proposal has evident parallels with bank convertible capital (cocos)—bonds that are to be converted into equity when the bank’s equity capital falls below a threshold. Bank cocos are spreading in use, led by regulatory requirements, especially in Switzerland and the UK, and more recently in the United States. They are in the process of being incorporated in the Basel III capital structure. In the Swiss case, cocos have multiple thresholds: the bond may be converted into equity if the equity-to-assets ratio falls below 5 per cent or, as in the case of one bank, if it falls below a higher threshold of 7 per cent. The Swiss regulator may also determine that a bond needs to be converted into equity to create additional loss absorption capacity and prevent a more expensive resolution process.

The crisis has emphasized the need for greater equity buffers. For banks, [Admati and Hellwig \(2013\)](#) have proposed that banks hold much higher levels of equity.

¹⁵ Proposals along this line start with [Weber *et al.* \(2011\)](#) and include [Pisani-Ferry *et al.* \(2013b\)](#), and [Barr and Pienkowski \(2013\)](#).

¹⁶ The literature on contingent capital for banks also discusses the possibility of market triggers, such as the level of spreads on credit default swaps rather than the debt-to-GDP ratio, as determining the trigger for restructuring the debt.

Bank cocos can be seen as a response—even if not perfect—to the movement towards greater equity holding. The key lesson from bank cocos is that a regulatory push was needed to persuade banks to move in that direction; however, once pushed, the initial objections regarding their complexity and pricing have diminished. Indeed, some banks are exploring the use of cocos, even absent immediate regulatory pressure, owing to the perception that the market would view the additional buffer favourably.

The concern with contingent debt is that the borrower may abuse the latitude offered by the easier restructuring. This is a problem with any form of contingent debt, not just the sovereign cocos proposed here. The bank cocos are subject to similar abuse: banks may acquire risky assets knowing they have an extra loss-absorption capacity. Yet, banks are attracting investors as the use of cocos spreads. The only real way to completely prevent the inherent moral hazard is by defining the contingency in terms of an indicator that neither the borrower nor the lender can influence, e.g. commodity prices or earthquakes. Such independent events, however, are not well correlated with the ‘exogenous’ component of the debt burden. However, despite the costs of moral hazard inherent in any realistic contingent debt proposal, the greater latitude provided to the borrower creates value for the lender via the ease of orderly debt restructuring and the borrower’s return to economic health. As [Eichengreen and Mody \(2000\)](#) show in the context of collective action clauses, this trade-off is potentially beneficial to the parties on both sides of the transaction. In the proposed design of sovereign cocos, by extending the duration of repayment, the lender refinances the borrower with an in-built extent of ‘forgiveness’ and, if the thresholds are reasonably set, both parties stand to gain. Moreover, as the presumption of bailouts fade, more realistic default probability assessments by the lender should also allow for the emergence of higher interest rates charged on the debt and lower debt levels.

(ii) Legacy sovereign debt

The legacy sovereign debt presents more intractable problems since existing contracts need to be broken. The conventional restructuring strategy works through debt exchanges, whereby the old debt obligations are traded for new obligations with a negotiated lower net present value.¹⁷ But debt exchanges create the problem of holdouts—the creditors who refuse to participate in the exchange. There is no perfect solution to this difficulty. [Buchheit *et al.* \(2013\)](#) propose an amendment to the ESM Treaty, which would prevent holdouts from gaining access to the distressed sovereign’s assets held within the territories defined by the ESM’s membership. Although assets will likely also be held outside the restricted area, the proposal will considerably undermine incentives to holdout.

¹⁷ [Zingales \(2011\)](#) proposed a debt exchange in which the outstanding value of the newly issued securities would be close to the prevailing market prices. For Italian bonds in September 2011, he estimated that the debt burden could be reduced by about 15 per cent. Such transactions are subject to game-playing by the creditor and debtors alike. [Perotti and Zingales \(2011\)](#) suggested a tax levied on investors proportional to the price of credit default swaps in the previous month. The revenues collected would help ease the sovereign debt burden. This is an attractive proposal, but because ECB intervention influences the price and implied default risk of sovereign debt, the effectiveness of such a tax is diluted.

There exists an additional challenge. Where the banks hold most of the public debt, would sovereign debt restructuring not create the risk of bringing down the entire financial structure of the country? In principle, the response to this concern is straightforward. If the banks' assets lose value—because the government is unable to honour its obligations to the banks—then the banks themselves need to be downscaled. In other words, the bank's own debt must have an equity-like character to deal with loss in asset values. In the alleged interest of shielding the banking system, it is easy to maintain the fiction that the assets and liabilities are worth more than they actually are. Such forbearance is liable to create zombie banks while the underlying debt problems remain latent (or even grow in magnitude). Pushing bank restructuring into the future cannot help.¹⁸

For banks, the key goal is to achieve efficient resolution (close them down, downsize them, and/or merge them with other banks). Here the approach is more straightforward. Connor and O'Kelley (2012, p. 1) argue that the bank regulator should have the authority to 'override existing bank liability contracts in explicit, contingent circumstances'. They report on several triggers for conversion of debt to equity. These include the debt-to-asset ratio, debt-to-tangible asset ratio, market-prices-to-book value, and market prices reflecting general conditions in the banking sector. Veronesi and Zingales (2010) argue that such debt–equity swaps are the most effective mechanism for recapitalizing banks, with virtually no cost to the public purse.

Finally, the same mechanism carries over to distressed private debt, such as home mortgages. For mortgages 'under water' (homes with values less than the loan amount), the repayment could be linked to the market price of the home (or the homes in the area) (see Posner and Zingales, 2009). Thus, instead of accumulating arrears based on the original contract, a new contract would align the payment due to the market price. For example, the starting debt burden under the new contract could be based on 80 per cent of the current market value. If the market price rises, there could be scope for the bank to share some of the upside. In principle, this should not make a difference to the bank's capital requirements if the expected losses had been properly accounted for. If they were not accounted for, then the debt owned by the bank would need to be converted into equity to recognize the fall in its asset values. No solution is without its own problems. Some homeowners with underwater mortgages who can nevertheless afford to repay under the original contract and/or owners who had taken speculative positions that went bad will also achieve reprieve. Any mechanism to carve out such borrowers is challenging: the debt-to-equity conversion is superior to other methods where the boundaries drawn are subject to greater abuse.

VI. The way forward

The likelihood that this crisis will be resolved without significantly more debt restructuring is small. In its scale and complexity, the eurozone crisis is like no other previous

¹⁸ Preventing banks from reaching this state in the future is a key lesson from the crisis. That the assets of the Cypriot banking sector reached 900 per cent of GDP without an effort to scale them down reflects many regulatory and surveillance failures.

crisis. The large weight of the eurozone in world trade implies that internal European problems have spread to the world economy, which lowers the likelihood of an externally induced demand stimulus to reignite growth. Five years of experience with fiscal austerity during this crisis have reaffirmed the historical ineffectiveness of austerity as a primary instrument of debt reduction. In contrast, the economic arguments for—and the historical record—favour using debt as a buffer against shocks to debt.

The reluctance to proactively deploy debt restructuring has led to an *ad hoc* process of episodic imposition of losses on private creditors; since that has been insufficient, the only other option has been increasingly concessional official financing. While concessional official financing is necessary to alleviate further economic and social distress, its inherent delays slow down the restructuring process, foster divisions within the eurozone, and create terrible incentives for future private borrowing and lending decisions.

The eurozone needs a framework for orderly debt restructuring—to deal with this crisis and the next. The lack of exchange-rate flexibility within the members of the eurozone will inevitably generate future booms and busts. The current policy dilemmas will reappear. Even if a fiscal union were feasible, to allow for unrequited transfers from a central community budget to distressed communities, a credible debt default and restructuring process must be in place. The process initiated at Deauville was a move in the right direction and the hasty retreat was unfortunate. With Cyprus, the European authorities have been inevitably pulled back to the Deauville policy direction through the route of bank debt that threatened to transform into sovereign debt. The high costs of the significant missteps and long delay in recognizing the inevitability are being borne by the Cypriot people.

Debt restructuring should ideally be automatic and continuous. While the degree of automaticity and continuity associated with pure equity contracts is not feasible, the design of debt instruments should accommodate as much flexibility as possible since such flexibility improves macroeconomic performance with limited offsetting costs. This is all the more so for sovereign debt, where the inflexibility can become a major source of instability.

The proposal described in this paper has, I believe, several merits. Being grounded in a clear theoretical framework, it is intellectually attractive. Moreover, it does not need a European directive or treaty change. Allowing countries to pursue such decentralized options makes them more likely to be used, compared to solutions that rely for their execution on collective European decisions. A point also in its favour is that the crisis is being resolved essentially through an *ad hoc* application of the principle proposed: as countries reach their limits of debt repayment, debt is being renegotiated.¹⁹ Unfortunately, the renegotiations are mainly with official creditors, making official debt, in effect, junior to private debt and creating severe problems for the future.

The question often asked is whether a commitment to the restructuring of debt as a matter of policy is ever possible—is there some inevitability about the reliance on *ad hoc* restructuring? The best route to a credible commitment is through Europe's own no-bailout rule. The European treaties prohibit the bailout of a European sovereign

¹⁹ Darvas (2012) takes this to the logical extreme. The interest rate on Greek debt obligations to official creditors, he says, should be reduced to zero, the maturities extended substantially, and the principal due should be linked to GDP.

by other European sovereigns and agencies. The presumption during this crisis was that the official no-bailout commitment could be maintained while also honouring all obligations due to private creditors. As this crisis has ground on, it has become clearer that this does not work.

Thus, in its treaties, Europe has a legitimate basis for—and now also the experience to validate—a sovereign debt restructuring system. A decisive approach in this direction will be good for the further management of the eurozone crisis. And because the move would set such a huge precedent, it would be good for the future of sovereign debt restructuring well beyond European borders and into the next crises.

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