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Debt Restructuring: Ramifications for the Euro Area

Draft Briefing Note

Abstract

The Greek sovereign is insolvent and despite the insistence of members of the Executive Board and Governing Council of the ECB and of EU policymakers to the contrary, it is likely that it will default before the European Stability Mechanism takes force in 2013. This paper discusses the likely costs of an early default for both Greece and the euro area. It considers ways of structuring such a default to minimise the likely damage.

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EXECUTIVE SUMMARY

- The Greek sovereign is insolvent. Waiting until the European Stability Mechanism comes into force in 2013 would improve the odds of an orderly Greek sovereign debt rescheduling. By 2013, all EU Member States are also likely to have created Special Resolution Regimes for banks, facilitating an orderly restructuring of banks that might be badly affected by a sovereign debt rescheduling. But what would happen if this is not possible? What would happen to Greece and to the Eurosystem if Greece defaults before 2013? How could a default before 2013 be best handled?
- The costs to Greece of an early default would depend on how it is handled. If the default is considered to be consensual and fair and if Greek banks need not write down their losses immediately, Greece might quickly find itself in roughly the same position as a country in an otherwise identical position that had not defaulted. If the default is viewed as unfair and as an affront to EU policy makers and institutions, Greece might be driven out of the euro area and the EU, with potentially devastating consequences for its economy and political situation.
- The immediate monetary cost to the Eurosystem and to EU governments of an early Greek default would not be large. However, there is significant uncertainty about the costs to the euro area and the rest of the EU that would result from the impact of an early Greek default on the euro area financial system and these depend to a great extent on how the default is handled.
- If EU banks do not have to write down, or mark to market, their Greek debt held to maturity right away and if the triggering of the CDSs does not cause too much disorder, the effect on the EU banking system outside of Greece of an early Greek default is likely to be significant but manageable.
- If the banks have to immediately write down all of their Greek sovereign debt following an early Greek default and if this and the consequences for the CDS market produce sufficient adverse selection and contagion, severe liquidity and even solvency problems could emerge for EU banks outside of Greece.
- If Greece defaults before 2013, it should keep the notional value of its debt unchanged and try to implement a change in the maturity structure and possibly a lowering of interest rates through negotiation with its creditors and especially with the ECB.
- Implementing a maturity structure extension or rollover of Greek debt, with or without a change in interest rates should be relatively simple. Most of the debt is in the form of bonds, documentation of the debt is up to date and little is held by retail investors. Almost all of the bond debt is issued under Greek law and it is internationally accepted that Greece has the legal right to change the terms, even though it is viewed as an act of default. It is estimated that, efficiently done, a rescheduling could be completed in five or six months.

1. INTRODUCTION: THE BANKING CRISIS AND SOVEREIGN DEBT

The Greek sovereign is widely believed to be insolvent. Former ECB chief economist Otmar Issing says that 'Greece is not just illiquid, it's insolvent'. Paul Krugman asserts that 'It's basically inconceivable that there won't be some significant losses on present value for bondholders'. Willem Buiter and Ebrahim Rahbari claim that 'default is not just a distinct possibility, but a high probability event.' On 1 June Moody's downgraded Greek debt by three notches to Caa1 and five-year credit default swaps on Greek government debt reached 1470 basis points. It appears to be just a matter of time before Greece defaults.

In 2013 the European Stability Mechanism (ESM) comes into being and by then all EU Member States should have created Special Resolution Regimes for their banks. The former should facilitate orderly and consensual sovereign debt rescheduling and the latter should facilitate the orderly restructuring of banks that might be badly affected by a sovereign debt rescheduling. Thus, members of the ECB and other European policymakers are adamant that Greece should not default on its debt before 2013.¹ Indeed the ECB is opposed to anything other than the mildest form of restructuring – a voluntary maturity extension achieved through a roll-over of maturing debt on the same terms as the old debt – at any time.

ECB President Jean-Claude Trichet has stated that 'default is not an issue for Greece' and he walked out of a meeting with euro area leaders in Luxembourg in April, apparently distressed that politicians were even considering the idea of a Greek debt restructuring. German Prime Minister Angela Merkel stated that 'it would raise incredible doubts about our credibility if we simply were to change the rules in the middle of our first programme.'² Nevertheless, the costs of postponing the inevitable may preclude their desired delay. This raises several questions. What would be the cost to Greece and to the rest of the euro area of such near-term default and how should the process of rescheduling be organised if the default occurs before the activation of the ESM? In this note I attempt to provide some answers to these questions.

¹ A Greek default, like most defaults, would not be a repudiation of all government debt, but rather a restructuring that would lower the present discounted value of payments to creditors.

² Quoted in Saltmarsh, Matthew, 'Head of European Central Bank says Greece will not be allowed to default,' *New York Times*, 8 Apr 2010 and Peel, Quentin, 'Merkel rejects Greek debt restructuring', *Financial Times* 16 May 2011.

2. WHAT WOULD BE THE COST TO GREECE OF A DEFAULT?

What types of costs do sovereigns and their nations suffer when they default? History provides some clues. Despite the relative calm of 2003 – 2007, waves of sovereign default are the norm and Greece has *already* defaulted five times since attaining independence in 1829. Reinhart and Rogoff (2009) document that in the 16th – 18th centuries France defaulted eight times and Spain six. Spain went on to default seven more times in the 19th century. At times during the late 1820s to 1840s nearly half the countries in the world were in default. More recently, defaults have been common in developing and emerging market economies. The incidence of default in Europe, Asia and Latin America since 1975 is shown in Table 1.

Sovereigns differ from other types of borrowers in that there is no international court that can declare a sovereign bankrupt and place it into administration. Consequently, sovereigns – unlike other borrowers – can choose not to repay their debts.

Since sovereigns, despite this, often decide to repay there must be significant costs to renegeing. But as history is replete with examples of sovereigns who were able to repay their debts and chose not to, this suggests that the costs need not be overwhelming. In this section I consider the costs of sovereign default to Greece.

Table 1. Numbers of Defaults for Latin American, Asian and European Countries 1975 – 2006

Argentina (3)	Ecuador (2)	Paraguay (2)	Philippines (1)
Bolivia (3)	Guatemala (2)	Peru (4)	Sri Lanka (2)
Brazil (1)	Honduras (1)	Uruguay (4)	Poland (1)
Chile (1)	Mexico (1)	Venezuela (4)	Romania (2)
Costa Rica (3)	Nicaragua (1)	Indonesia (3)	Russia (2)
Dominican Republic (2)	Panama (2)	Myanmar (1)	Turkey (2)

Source: Reinhart and Rogoff (2009)

2.1. Gun Boats and Blockades

When Greece defaulted on its indemnity resulting from the Greco-Turkish War, European powers took over administration of Greek revenues in 1898.³ Responding to a Venezuelan default, British, German and Italian gunboats blockaded and bombarded Venezuelan ports in 1902-1903. Outright sanctions such as these were a popular and, it has been argued, effective method of dealing with defaulting debtor nations in the period 1870 – 1913. The use or threatened use of force by one nation against another with the intent of enforcing debt contracts has fallen into disuse, however, and Greece has little reason to fear that it will again meet its earlier fate – although recent proposals for placing Greek tax administration and the management of its privatisation process under EU and/or IMF control reflect the ‘spirit of 1898’.

³ Mitchener and Weidenmier (2010) provide a discussion of the use of force against debtor nations and evidence of its effectiveness.

2.2. Legal Confiscation

In the mid-1990s Peru restructured its sovereign debt in the form of Brady bonds. The New York based vulture fund Elliot Associates bought \$20 million of distressed Peruvian debt for \$11.4 million and successfully sued the Peruvian sovereign in a New York court to make good on its obligations.⁴ As the Peruvian sovereign had no property in New York to attach, Elliott planned to intercept funds that were being transferred internationally to pay the Brady creditors. When Peru discovered this and did not make the transfer, Elliott was ultimately successful in getting a Belgian court to order the settlement house Euroclear to abstain from accepting money from the Peruvian sovereign and paying its Brady creditors. In danger of defaulting on its newly restructured debt, Peru was forced to settle, paying \$56.3 million (which included arrears) to Elliot.

While no international court can force a country to pay its debts or put it into administration if it does not do so, issuing debt is recognised as a commercial act. Could foreign creditors bring suit against a delinquent debtor euro area sovereign in their own or in foreign courts with the intent of attaching the debtor sovereign's assets held abroad, including its payments to any new creditors?

Under international law, if a credit contract is entered into under the laws of a particular state and if that state changes the governing law, then this change becomes retroactively built into the credit contract. Thus, under English law and that of many other jurisdictions, if a loan contract is governed by the laws of the debtor nation, then that nation can change the terms of the loan contract. The reason that Elliot was successful in its pursuit of Peru was that Peruvian sovereign debt, like much of developing country sovereign debt, was contracted under New York law; well over 90 percent of most euro area debt, including Greek debt, was issued under and is governed by local law.⁵ Thus, for the bulk of their loans, euro area countries have the legal right to call a moratorium on debt payments, reschedule their payments or change the currency in which the loan is denominated.⁶ Such an act would be considered a 'credit event', or act of default, but the ability of bond holders to legally harass euro area sovereigns is severely limited.

2.3. Disruption of Trade

A third type of cost is potential trade disruption. In their seminal work on sovereign default, Eaton and Gersovitz (1981) view creditors' potential to disrupt trade as the direct cost faced by defaulters. The empirical literature has supported this view: Rose (2002) found that renegotiation led to a significant decline in bilateral trade of about eight percent per year for 15 years between creditor and debtor countries.⁷ Possible reasons for this are that creditor nations responded to a default with tariffs and quotas; creditors and others denied defaulting debtors access to trade credit; defaulting nations feared their exports and trade payments would be seized. None of these, however, are relevant for defaulting euro area countries.

⁴ See Sandoval (2002) for a discussion of Elliott and Peru. Zambia and Argentina have also had to pay vulture funds. In Europe, Russia was forced to settle with the Swiss company Noga which attempted to enforce contracts with Russia by seizing embassy bank accounts, Russian property in France, naval fighter jets and uranium shipments. See Wright (2011) for a description.

⁵ Of Greece's (end-April) bond debt of 294 billion euros, only 25 billion euros worth was not issued under Greek law. See Bucheit and Gulati (2010).

⁶ See Allen and Overy LLP (2010) for a discussion of the legal rules.

⁷ There may be some problem of reverse causality: nations may default when they realise they are about to experience bad times with low exports.

2.4. Lost Access to Financial Markets

A fourth type of cost is losing access to international financial markets or having to borrow at less favourable terms. While this might seem like an obvious and likely outcome, from a theoretical view it is not completely well established why a country would be more likely to be excluded from capital markets or face worse terms if it rescheduled than if it had the same post-rescheduling debt characteristics but had not reneged. If all sovereigns repay loans if they are able to, then terms and access should depend only on the ability to repay, not on a past history of default.

If not all sovereigns who can repay do, then excluding defaulting sovereigns from capital markets or giving them worse terms must either be a result of the market learning something about their willingness to repay from their act of default or it must be part of a punishment strategy that causes otherwise unwilling sovereigns to repay their loans when they are able.

A story that explains why the market might learn something from default requires that prior to default a sovereign's willingness to repay is its private information. Unwilling sovereigns initially masquerade as willing ones to borrow on favourable terms. Later, they exploit their reputation by defaulting. Their type revealed, they lose their access and good conditions. A story that supports losing access and good terms as a punishment is as follows. Suppose that sovereigns will choose not to repay if default is to their benefit. If other sanctions are insufficient to induce a country to repay if it can, a country might be deterred from defaulting when it is able to repay by the threat of being punished by being excluded from future borrowing for some period of time. If such a threat is credible and there is perfect information, then international borrowing is possible and countries that can repay do. However, if foreign creditors cannot distinguish between cases where the country is unable to repay and cases where the country is able but unwilling to repay then they must carry out their threat whenever default occurs – even though they know that, since the threat is credible, any defaulting sovereign is unable to repay. Both of these stories, however, require strong informational assumptions and neither seems perfectly satisfactory.

It is now widely agreed that sovereign default has not led to permanent exclusion from capital markets.⁸ Lindert and Morton (1989) document that in the 1930s foreign borrowing was no less restricted for non-defaulters than defaulters. Jorgensen and Sachs (1989) find that when international capital markets reopened in the 1960s, both non-defaulters and defaulters gained access. Gelos *et al* (2004) find that after the defaults of the 1980s it took about 4-1/2 years for defaulters to regain access to international capital markets; after the defaults of the 1990s it took only 3-1/2 months.

2.5. Worse Ratings and Higher Interest Rates

While there is little empirical evidence that default leads to any lengthy exclusion from capital markets, it is likely to temporarily worsen a country's credit rating. Cantor and Packer (1996) found that default since 1970 had a significant negative effect of about 2-1/2 notches on a country's 1995 credit rating. Borensztein and Panizza (2008), however, find that while default has a significant negative effect of about 1-3/4 notches, this effect is not long lasting. Ratings in 1999 – 2000 were influenced by default in the period 1995 – 2000, but the effect of earlier defaults was not significant.

⁸ See Obstfeld and Rogoff (1996), Depaoli et al (2006) and Borensztein and Panizza (2008) for discussions of this.

Clearly a Greek sovereign default would be interpreted as a 'ratings event' and the ratings of Greek sovereign debt would immediately drop. However, if the default improves the Greek fiscal situation, this decline could be very short lived.

There is some mixed evidence that default leads to worse borrowing terms. Lindert and Morten (1989) find no evidence that countries that defaulted in the 1930s paid higher costs in the 1970s, but Dell'Arriccia *et al* (2002) find that Brady bond countries paid higher rates in the late 1990s and Borensztein and Panizza (2008) find that default had an immediate and large, although short-lived, effect of about 400 basis points on borrowing costs in 1997 – 2004.

The current Greek government is – at least for the relevant timeframe – stuck with the current state of Greek political and economic institutions and attitudes. While Greece has the economic resources to repay its sovereign debt, were these institutions and attitudes different from what they are, it seems clear that a default in the near future would be the result of the current government's inability to repay, rather than its unwillingness.⁹ This seems sufficiently clear and noncontroversial that there is no apparent logical explanation for why Greece should be excluded from capital markets when it defaults. As noted, recent empirical evidence by Gelos *et al* (2004) suggests that any loss of access after a rescheduling is likely to be measured in months rather than years. The impact of a Greek default on its post-rescheduling borrowing terms is less clear. The empirical evidence appears to suggest that at least for a few years Greece might face higher interest rates than in a counterfactual world where it had the same post-rescheduling debt characteristics but had never defaulted. However, these would of course be better terms than if it struggled on for a few more years without defaulting.

2.6. A Domestic Financial Crisis

Borensztein and Panizza (2010) find that on average the government of a defaulting country suffers a 16 percentage point decrease in electoral support and the finance minister loses his job about a quarter of the time. This suggests that there must be domestic costs to default. About 30 percent of Greek sovereign debt is held domestically and J. P. Morgan estimates that a fifty percent haircut on this debt would leave Greek banks with equity worth only one percent of their assets.¹⁰ In one sense the act of defaulting is irrelevant. Greece is already insolvent and Greek bonds are worth about half of their current notional value whether or not Greece defaults. A default with a fifty percent haircut only formalises matters. However, if this causes banks and other financial institutions to have to formally account for their losses now, rather than delaying official recognition until 2013, then they may be forced into selling assets at fire sale prices and a domestic banking crisis and wider financial crisis may ensue.

ECB officials have publicly warned that if Greece were to renege on its debt, the Eurosystem might refuse to accept Greek bonds as collateral in borrowing from the Eurosystem, thus dooming the Greek banking system.¹¹ This, threat however, does not appear entirely credible.

⁹ Borensztein and Panizza (2010) suggest that a reason that defaults are frequently delayed is to ensure that there is consensus that the borrower is unable, rather than unwilling, to repay.

¹⁰ See Alloway (2010).

¹¹ In an interview with the *Financial Times*, Lorenzo Bini Smaghi said, 'It would be the default that produced the collapse of the banking system. Greek banks hold Greek government bonds, the other assets they own are partly guaranteed by the Greek government. If there is no state any more, the financial system collapses. We cannot finance the state because there is a prohibition on monetary financing in the Treaty. We have to lend to sound counterparties and against adequate collateral.'

It does not seem sensible that the Eurosystem would find the demise of a euro area nation's banking system to be any more desirable after the restructuring of its debt than before. It would have the inevitable effect of a further significant decline in Greek output and even larger haircuts on Greek debt, which would be to the detriment of the foreign holders of such debt, which include euro area banking systems and the Eurosystem itself.

The conclusion to be drawn from this analysis is that the damage to Greece of a pre-2013 default depends on how it is handled. In the optimistic scenario Greece is viewed as willing but unable to repay and the burden that it imposes on its creditors is seen as reasonable and fair. The restructuring is done so that banks in Greece and elsewhere do not have to realise the losses on assets held to maturity right away.

The ECB does not take revenge. In this case Greece can expect to see a short-lived fall in its credit ratings and a brief exclusion from capital markets. It can then recommence borrowing at rates not too dissimilar from those a country in its position that had not defaulted could expect and it can recapitalise its banking system by issuing debt that is accepted as collateral at the Eurosystem.

In a less happy scenario Greece is viewed as offering less favourable terms to its creditors than it is able to and flouting EU policymakers and conventions. The default causes banks inside and outside of Greece to be forced to immediately write down their losses. Angry ECB policymakers refuse to accept Greek debt as collateral, the Greek banking system fails and Greece leaves the euro area and most likely the EU as well.¹² Greek output collapses; only the IMF with its conditionality remains as a potential creditor; the domestic political consequences are unknown.

¹² Greece cannot be forced to leave the Euro area, but Eurosystem officials could probably make matters sufficiently unpleasant that Greece would choose to depart. It appears that the consensus view is that leaving the Euro area would end a country's membership in the EU.

3. WHAT WOULD BE THE COST TO THE EURO AREA OF A GREEK DEFAULT?

The euro area outside of Greece would also face costs in the event of an early sovereign Greek debt default. In this section I consider the nature and possible size of these costs.

3.1. The Risks to the Euro area Banking System

The estimated losses of the most heavily exposed banks in the event of a fifty percent write down of Greek debt – which is widely viewed as the *minimum* amount that might be necessary for Greece to return to fiscal sustainability – are shown in Table 2. It is seen from this table that the estimated losses to banks are significant, but fairly small compared to total equity. Alone, they are unlikely to pose a major threat to the stability of the euro area banking system.

Table 2. Estimated Losses in the Event of a Fifty Percent Write Down of Greek Debt (billion EUR)

	Estimated Loss	Total Equity, End 2010
BNP Paribus	1.7	74.6
Dexia	1.3	19.2
Commerzbank	1.1	28.6
Société Générale	0.9	46.4
ING Direct	0.7	35.0
RBS	0.5	117.6

Source: Losses are due to Morgan Stanley, quoted in Alloway *et al* (2010).

Unfortunately, however, these numbers understate matters as European banks' exposure to Greece is much larger than their holdings of Greek government debt and other Greek assets are apt to lose value along with sovereign debt. Preliminary BIS data indicates that the total exposure of euro area banks to Greece at the end of 2010 was \$130 billion, down from \$154 billion at the end of the third quarter, with French banks holding \$59.4 billion worth and German banks holding \$40.2 billion worth. As in the case of the Greek banking system, the damage caused by a default would be mitigated if the restructuring did not require the banks to write down the value of their debt held to maturity.

Another potential cost to the euro area banking system of a Greek default is that it is likely, depending on how it is structured, to be interpreted as a 'credit event' that triggers the \$76 billion of outstanding credit default swaps on Greek government debt. This could potentially cause solvency problems for some financial institutions and because it is unknown precisely who issued these derivatives it is likely to lead to adverse selection and liquidity problems. However, if it is possible to structure the default so that it is *not* interpreted as a credit event, the outcome could be even worse. The holders of the vast outstanding stock of credit default swaps on *all* sovereign debt would realise that their 'insurance policies' might be worthless. For the Portuguese, Irish, Italian, Greek and Spanish sovereigns alone this stock amounts to nearly \$600 billion.¹³

¹³ CDS volume numbers are gross notional dollar equivalents from the Depository Trust and Clearing Corporation.

3.2. Losses to the Eurosystem and EU Tax Payers

Given the ECB's vehement objections to a Greek rescheduling, it would be interesting to know exactly how much Greek debt the Eurosystem holds. On 27 May the ECB announced that it had purchased EUR 74.9 billion of bonds in their Securities Market Program. However, with its usual flouting of the requirements of accountability it does not believe that the tax payers who are on the hook for any losses have the right to know how much they are in for and so we must guess what fraction of this is made up of Greek bonds and what the ECB paid for them. J. P. Morgan estimates that the ECB has spent EUR 40 billion purchasing Greek government bonds with a notional value of EUR 50 billion.¹⁴

In addition to its purchases under the Securities Market Program, the Eurosystem holds Greek debt as collateral as a result of its lending to Greek and other euro area banks. J. P. Morgan estimates that as of the end of February Greek banks had borrowed EUR 91 billion from the Eurosystem, posting collateral with a notional value of EUR 144 billion. This collateral is believed to consist of EUR 48 billion worth of Greek government debt, EUR 55 billion worth of bonds issued by the Greek banks and guaranteed by the Greek government and EUR 33 billion worth of Greek asset-backed securities and covered bonds.

Given the above numbers, it is estimated that the Eurosystem invested or lent EUR 131 billion to acquire outright or as collateral for its loans Greek debt with a notional value of EUR 194 billion. Assuming, as seems plausible, that all of the collateral would be subject to about the same haircut in the event of a default, a rescheduling that resulted in a 50 percent haircut on Greek sovereign debt would result in a maximum loss (ultimately borne by the euro area tax payers) of about EUR 34 ($0.50 \times 194 - 131$) billion. As, however, not all of the borrowing banks would default if the Greek sovereign defaulted and as some assets would be recovered from borrowing banks that defaulted, this estimate is likely an overstatement.

A loss would inevitably be compared to the size of the Eurosystem's capital, which is EUR 81 billion. Losing 42% of its capital in one year might be viewed as highly embarrassing and not a sign of great competency. Coupled with the ECB's chronic lack of transparency and accountability this could cause some erosion of the institution's legitimacy. However, central banks do not need positive capital and it is probably more useful to compare the possible loss to a typical year's potential seigniorage revenue. Proceeding with very rough, back-of-the-envelope figures, suppose that in a typical year the real value of the euro area monetary base is ten percent of euro area GDP and inflation and the real growth of GDP are both two percent. Then the amount of seigniorage collected is about 0.4 percent of euro area GDP. If euro area GDP is very roughly EUR 10 trillion, then the Eurosystem can collect EUR 40 billion of seigniorage. Thus, the loss associated with Greek debt is the same order of magnitude as a year's seigniorage revenue. Alone, it poses no threat to the Eurosystem balance sheet or solvency.

EU governments and the IMF have made loans to Greece under the Greek Loan Facility. Total disbursements as of March 2010 amount to EUR 53 billion, EUR 38.4 billion on behalf of governments and EUR 14.6 billion on behalf of the IMF. Another tranche of EUR 12 billion is due to be disbursed in June, with EUR 12 billion on behalf of governments and EUR 4 billion on behalf of the IMF. The IMF will almost surely be paid back in full for its loans because of its preferred creditor status, but the EU governments will face the same haircut as every other lender.

¹⁴ This and the other J. P. Morgan figures in this subsection are reported in Alloway (2010).

In addition, state-owned entities such as KfW in Germany or the Caisse des Dépôts et Consignations in France, have absorbed quite a bit of bad sovereign debt previously held by commercially operating banks. The German commercial property lender Hypo Real Estate, for example, was believed to be holding EUR 7.9 billion of Greek government bonds and EUR 2.0 billion of other Greek exposure, but it may have passed some or all of these assets on to German state-owned enterprises by now.¹⁵

To summarise the results of the section, the immediate and direct monetary cost to the Eurosystem and to EU governments of an early Greek default would not be large. However, there is significant uncertainty about the costs to the euro area and the rest of the EU as a result of the consequences of an early Greek default for the euro area financial system. As with the costs to Greece, the costs to the euro area and the EU depend to a great extent on how the default is handled. If banks do not have to write down their debt held to maturity right away and if the triggering of the CDSs does not cause too much disorder, the effect on the banking system is likely to be significant but manageable. If the banks have to write down their debt immediately and if this and the consequences for the CDS market produce sufficient adverse selection and contagion, severe liquidity and even solvency problems could emerge.

¹⁵ Reported in Kaminska, Izabella, 'Who's exposed to Greece, bank edition', *Financial Times*, 6 May 2011.

4. WHAT CAN BE DONE TO MAKE A PRE-ESM DEFAULT MORE ORDERLY?

If Greece were to default before 2013 the form that the default takes will be a crucial determinant of the costs faced by Greece and the euro area. There are probably three ways that Greece might default. First, it can choose to exchange its debt for new debt with a lower notional value. It is doubtful that its creditors would find this appealing and it seems this would have to be done unilaterally. Second it can unilaterally change its debt for new debt with the same face value and a longer maturity structure. This debt might also feature lower interest rates, but the interest rates on Greek debt are already low. This change in the maturity profile would have the effect of lowering the present discounted value of Greek debt, but would not achieve as much debt relief as a significant reduction in its notional value. Third, it could choose the second option, but instead of imposing it unilaterally, it could negotiate the terms with its creditors.

Were Greece to follow the first strategy, Greece might – in the absence of a domestic banking crisis and a hostile reaction by the ECB – return to fiscal sustainability. But, banks both inside and outside Greece would be forced to write down their debt held to maturity and credit default swaps would be triggered. This would be likely to lead to liquidity problems and, in the worst case, significant contagion and solvency problems. Greek creditors, including the Eurosystem and euro area governments might not react with equanimity and Greece could in the worst case find itself driven from the euro area and the EU when its debt is no longer accepted as collateral.

Were Greece to choose the second option, it would obtain less immediate debt relief and this would have to be viewed as a holding strategy until 2013. However, the regulators might not require that the new debt that is held to maturity be written down. There is no reason for sensible regulators to do this just because of the restructuring. If the Greek sovereign is willing but unable to repay its debt, then the market value of the outstanding stock of sovereign debt should be equal to the amount that the sovereign is able to repay. Thus, if a change in maturity structure and interest rate still leaves the Greek sovereign with more than it can repay then the market value of the new debt will equal the market value of the old debt. If Greece imposes this default on its creditors unilaterally, it will constitute both a ratings event and a credit event, triggering CDSs. Moreover, there is some chance that ECB and other EU policymakers will be sufficiently offended that Greece might find it costly or impossible to have its debt accepted as collateral by the Eurosystem and it would face worse terms in any post-2013 negotiated rescheduling.

If Greece defaults before 2013, it should try to implement the third option and attain a change in the maturity structure and possibly interest rates through negotiation with its creditors and especially with the ECB. A negotiated or 'voluntary' restructuring or rollover would likely be viewed by the ECB and the EU as much less confrontational. This should be possible: it is credible that Greece might find the second option more agreeable than the additional required fiscal austerity necessary to hold off a default until 2013 and the ECB should find option three more appealing than option two. Roubini (2010) *et al* note that a benefit of this choice is that it *might* be structured so that it is not interpreted as a 'credit event', triggering the Greek sovereign CDSs. However, as previously discussed, if such a voluntary soft restructuring were *not* declared a credit event, it would undermine the sovereign CDS market throughout the EU.

Should agreement be reached on a rescheduling, implementing it should be relatively simple. Of the EUR 319 billion of outstanding Greek sovereign debt at the end of April, EUR 294 billion worth is in the form of bonds. Documentation of the debt is up to date and little is held by retail investors. Almost all of the bond debt is issued under Greek law and it is internationally accepted that Greece has the legal right to change the terms. It is estimated that, efficiently done, a rescheduling could be completed in five or six months.¹⁶

¹⁶ See Buchheit and Gulati (2010).

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