CIGI PAPERS
NO. 33 — JUNE 2014

SOVEREIGN DEBT CRISIS MANAGEMENT
LESSONS FROM THE 2012 GREEK DEBT RESTRUCTURING

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SOVEREIGN DEBT CRISIS MANAGEMENT: LESSONS FROM THE 2012 GREEK DEBT RESTRUCTURING

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ACRONYMS

bps	basis points
CACs	collective action clauses
CDS	credit default swap
DSA	Debt Sustainability Analysis
EBA	European Banking Authority
ELA	Exceptional Liquidity Assistance
G20	Group of Twenty
ECB	European Central Bank
EFSF	European Financial Stability Fund
ESM	European Stability Mechanism
GLF	Greek Loan Facility
GGBs	Greek government bonds
IIF	Institute for International Finance
IMF	International Monetary Fund
ISDA	International Swaps and Derivatives Association
NCBs	national central banks
NPV	net present value
OMT	Outright Monetary Transactions
OSI	official sector involvement
PSI	private sector involvement
SDRM	Sovereign Debt Restructuring Mechanism
SMP	Securities Market Program

EXECUTIVE SUMMARY

The 2012 Greek debt exchange was a watershed event in the euro area debt crisis. It generated fears of contagion and was viewed as a threat to the euro itself. Although it achieved historically unprecedented debt relief, amounting to €106 billion (55 percent of GDP), it was "too little, too late" in terms of restoring Greece's debt sustainability. There is a heated debate as to whether the debt restructuring should have taken place sooner, when Greece's adjustment program was agreed to in May 2010. This paper argues that a deep haircut up front, under threat of legislative action, would have been seen as unnecessary and deeply coercive. But delaying the restructuring beyond mid-2011, when it became clear that Greece's debt was unsustainable, was unjustified. The delay reduced the stock of privately held debt subject to a haircut, possibly making an official debt restructuring inevitable down the road. Initial fears that the Greek debt restructuring would pose a serious threat to the euro area's financial stability proved to be exaggerated. On the contrary, it demonstrated that an orderly default involving a pre-emptive debt restructuring is possible in a monetary union, provided appropriate firewalls are in place to limit contagion risks. With crisis management institutions and procedures now in place in the euro area, and with much stricter fiscal surveillance, the Greek experience is likely to remain unique in the history of debt restructurings; however, some lessons can be learned from its specific features.

INTRODUCTION

The 2012 Greek debt exchange and subsequent buyback was a key episode in the euro area debt crisis that erupted in 2009. It was the largest debt restructuring in the history of sovereign defaults, and the first within the euro area. Its historical significance lies not only in its unprecedented size — amounting to a €200 billion debt exchange and €30 billion debt buyback — but also in its timing, size of creditor losses, modalities and potential for contagion to the rest of the euro area periphery.

Greece was the first country to lose access to capital markets, in May 2010, with Ireland following in November 2010 and Portugal in May 2011. Spain and Cyprus also sought official financial assistance in 2012 and 2013, respectively, although Spain only requested funding to recapitalize its banks, rather than a full bailout. Italy seems unlikely to request a bailout after newly elected Prime Minister Matteo Renzi initiated a number of far-reaching economic and political reforms in the spring of 2014. Ireland exited official support at the end of 2013, and Portugal followed suit in May 2014. Greece is the only euro area country that has restructured its debt, and expectations that other peripheral countries might follow suit have receded.

This paper examines the Greek debt exchange and the subsequent debt buyback against the background of the euro area crisis, with a view to drawing lessons for any future debt restructuring in the euro area and beyond. Several observers have deplored the delay in Greece's debt restructuring, coming as it did nearly two years after the adjustment program was launched in May 2010. However, it is questionable whether an earlier restructuring on the same terms would have been politically feasible, given the impact on bank balance sheets in core countries — notably France and Germany — and the fear of contagion to the euro area periphery. With the benefit of hindsight, it is also doubtful that an early restructuring on the same terms would have achieved debt sustainability, given the bigger-than-expected output collapse and its impact on public finances and bank balance sheets. Nevertheless, the paper concludes that fears of contagion were exaggerated and that the restructuring could have taken place sooner without undermining stability. Delaying the restructuring implied that the economic cost to Greece was higher than it needed to be. Externally held debt remained higher than it would have been otherwise, adding to the transfer of real resources that will be required to service it.

The delay in Greece's restructuring and its generous treatment of holdouts has triggered proposals for an intermediate approach between the two extremes: on one hand, a statutory Sovereign Debt Restructuring Mechanism (SDRM), proposed by the International Monetary Fund (IMF) in the aftermath of Argentina's 2001 default but rejected by creditors (Krueger 2002), and on the other, the prevailing contractual, market-based approach[1] based on collective action clauses (CACs)[2] agreed to on a case-by-case basis. As there is little appetite for reviving the SDRM or adopting various kinds of court and arbitration measures, current proposals focus on enhancements of the prevailing CAC template to secure creditor participation and expedite negotiations. The IMF is exploring alternatives to the SDRM that would be acceptable to creditors, including making the contractual framework more effective through more robust aggregation clauses in CACs (IMF 2013a). To limit the risk that Fund resources are only used to bail out private creditors, the IMF has also proposed a creditor bail-in as a condition for Fund lending in cases where the debtor has lost market access, until a clear determination if a haircut is needed can be made.

1 The contractual approach emphasizes voluntary agreements negotiated in good faith and is described in the *Principles for Stable Capital Flows and Fair Debt Restructuring*, the voluntary code of conduct agreed between sovereign debtors and private creditors, which was endorsed by the Group of Twenty (G20) in November 2004. The Institute for International Finance (IIF) recently adopted an Addendum to its *Principles* that takes into account the experience of the Greek debt restructuring (IIF 2012).

2 CACs help overcome creditor coordination problems by allowing important terms of the bond to be amended by a defined majority of holders. They facilitate a debt restructuring by making the amendments binding on all holders, including those who voted against any such amendment. Essentially, CACs eliminate contract rights through majority voting without any court supervision and outside a rules-based statute.

Proposals also include the creation of a Sovereign Debt Forum to provide a venue for continuous improvement in the process of dealing with sovereign debt service issues and for proactive discussions between debtors and creditors to reach early understandings in order to avoid a full-blown sovereign crisis (Gitlin and House 2014).

On the other hand, private creditors (represented by the IIF, a global association of financial institutions), believe that good-faith negotiations remain the most effective framework for reaching voluntary debt-restructuring agreements, in particular in the complex cases of debtor countries that are members of currency unions. Nevertheless, the IIF recognizes that further enhancements are possible and desirable, including through more robust aggregation clauses. On the contrary, "the imposition in pre-default cases of non-negotiated, unilateral deals by the debtor with concurrence by the IMF...would severely undermine creditor property rights and market confidence and thus raise secondary bond market premiums for the debtor involved and other debtors in similar circumstances" (IIF 2014).

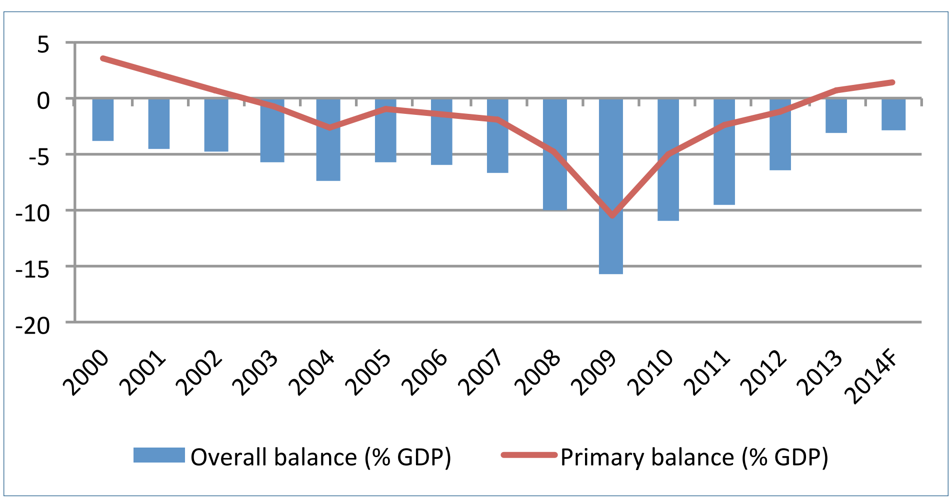
Overall, the Greek experience shows that an orderly restructuring is possible in a currency union, but that firewalls and supportive crisis-management institutions are necessary for it to take place smoothly, without major contagion effects. The prevailing wisdom was that no debt restructuring would ever be necessary in the euro area because the Stability Pact, an agreement among EU members to maintain fiscal discipline, would ensure debt sustainability. Private investors wrongly assumed that there is no risk of default of a euro area sovereign. Crisis management procedures and institutions had to be invented *in medias res,* as there had been no preparation whatsoever for a sovereign default. Policy paralysis and conflicting signals from policy makers compounded the crisis. With crisis management institutions and procedures now in place in the euro area, the Greek experience is likely to remain unique in the history of debt restructurings, although some lessons can be learned from its specific features.

BACKGROUND TO THE 2012 GREEK DEBT RESTRUCTURING

THE MAY 2010 EU/IMF PROGRAM

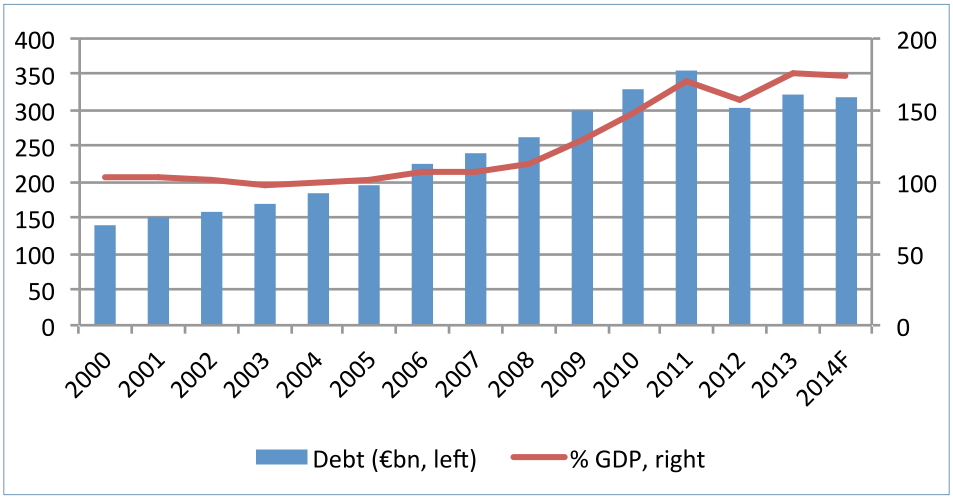
Greece enjoyed above-average growth after joining the euro area in 2001. The elimination of exchange-rate risk reduced interest rates to historically low levels, while markets forgot about credit risk. Growth was fuelled by a debt-financed consumer boom and by expansionary fiscal policy. The fiscal room created by the "euro dividend" that slashed interest costs was wasted for the sake of short-term stimulus, while strong GDP growth temporarily masked the rise in public debt. Inflation remained persistently above the euro area average and resources moved from the tradables sectors, such as manufacturing, which are price-takers, to the increasingly lucrative sheltered sectors, such as construction and retail trade. By the time the global financial crisis hit in 2008, Greece's general government deficit had reached 9.9 percent of GDP and the external current account deficit had reached 14.9 percent of GDP, leaving the country vulnerable to a "sudden stop" in capital flows.

Figure 1: Greece — General Government Balance



Data source: IMF (2014).

Figure 2: Greece — General Government Debt



Data source: IMF (2014).

The Greek debt crisis was triggered by the revelation of the newly elected Papandreou government in October 2009 that the budget deficit would amount to 12.5 percent of GDP, more than twice as high as previously reported (it was later confirmed at 15.6 percent). The large discrepancy in the reported figures undermined the credibility of EU budgetary surveillance and gradually led to a sharp increase in Greece's borrowing costs. The slide accelerated after Standard and Poor's and Moody's downgraded Greece by one notch in December 2009, to BBB+ and A2 respectively. Concern that Greek government bonds (GGBs) would no longer be eligible for European Central Bank (ECB) refinancing operations after collateral rules returned to pre-crisis levels at the end of 2010 fuelled a sell-off. The 10-year credit spread over German bunds rose gradually, from 130 basis points (bps) at end-September 2009 to 600 bps ahead of huge bond rollovers due in April and May 2010, when Greece lost access to capital markets. In late April, Standard and Poor's downgraded Greece's debt three notches to junk status (BB+), with negative outlook. To forestall a massive sell-off, the ECB was forced to change its collateral rules to ensure that GGBs remained eligible for refinancing operations (ECB 2010a).[3]

As the crisis unfolded, Germany and other surplus countries initially failed to provide a clear signal of their willingness to support Greece. They invoked the "no bailout" clause enshrined in Article 125 of the EU Treaty, but eventually agreed to provide financial assistance. Negotiations on a rescue package were already at an advanced stage by the time Greece lost access to capital markets. A three-year economic adjustment program was formally agreed to in early May 2010, supported with official financing of €110 billion (48 percent of GDP), provided by the euro area countries and the IMF in proportion 8/11 (€80 billion) and 3/11 (€30 billion) respectively (IMF 2010). Program monitoring was conducted jointly by the European Commission, the IMF and the ECB (the "troika" of official creditors). Funding from euro area countries was provided in the form of bilateral loans, as the European Financial Stability Fund (EFSF)[4] was not yet operational. The IMF loan, equivalent to 3,212 percent of Greece's quota, was far above normal access limits and constituted the largest-ever loan to a member country. The size of the overall financing package was historically unprecedented, both in absolute terms and relative to the debtor country's GDP, as was the size of the imbalances facing Greece. Simultaneously, the ECB launched a secondary market bond purchase program, referred to as the Securities Market Program (SMP), in an effort to keep sovereign borrowing costs in the euro area periphery at sustainable levels.

After a strong start, the pace of reform in Greece slowed. A sequence of bad news, including upward revisions of the

3 The ECB originally required that banks post "appropriate collateral" with an A- minimum rating to access its discount window, but subsequently eased its collateral rules in several steps, including after Greece's sovereign debt was downgraded below investment grade the week before the Greek rescue package was announced.

4 The EFSF is a temporary crisis response and assistance mechanism, created by the euro area member states as a limited liability company under Luxembourg law on the basis of an Economic and Financial Affairs Council decision on May 9, 2010. Funded with an initial capital of €440 billion, the EFSF became fully operational in early August 2010. It was superseded by a permanent mechanism, the European Stability Mechanism (ESM), created by an intergovernmental treaty that entered into force on October 8, 2012. The mandate of both institutions is to safeguard financial stability in Europe by providing financial assistance to member states subject to an adjustment program. They may also intervene in the primary and secondary bond markets, act on the basis of a precautionary program and finance recapitalizations of financial institutions through loans to governments. They are funded by issuing bonds in international capital markets with the guarantee of member states. After the creation of the ESM, the EFSF no longer undertakes new commitments, but it continues to fund existing programs.

fiscal deficit and debt, triggered further credit downgrades. Market sentiment plunged in the spring of 2011, fuelled by social unrest, a deepening recession and expectations of a debt restructuring. On the policy front, growth-oriented structural reforms stalled in the face of opposition from special interest groups. In early June 2011, rating agencies downgraded Greece to near-default status (CCC and Caa1 by Standard and Poor's and Moody's respectively). Sharply lower confidence triggered rising deposit outflows, as fears grew that Greece would be forced to exit the euro area, with the ECB providing massive liquidity support to preserve stability. At the time of the fourth review of the program in early July 2011, the IMF openly recognized that Greece was unlikely to return to market financing in early 2012 as envisaged under the program, and estimated that additional financing of €70 billion would be needed until mid-2013, or €104 billion if market access were further delayed to mid-2014 (IMF 2011). In May 2010, there was not yet overwhelming evidence of the need for a debt restructuring. By the spring of 2011, it was clear that Greece's debt was on an unsustainable upward spiral. The possibility of a sovereign default loomed.

In Europe, waning confidence in the Greek authorities' resolve to implement the program generated reluctance to provide further financial support, bringing the option of involvement from the private sector to the fore. By early July, there were widespread press reports of a deadlock between European authorities and banks over the terms of a Greek debt restructuring (*Financial Times* 2011). European leaders eventually agreed at the July 21 euro area summit to continue supporting the authorities' program — provided a number of prior actions were met — through a combination of a voluntary debt exchange, dubbed "private sector involvement" (PSI), and new official financing to bridge the projected delay in the restoration of Greece's market access.

THE JULY 2011 PSI DECISION

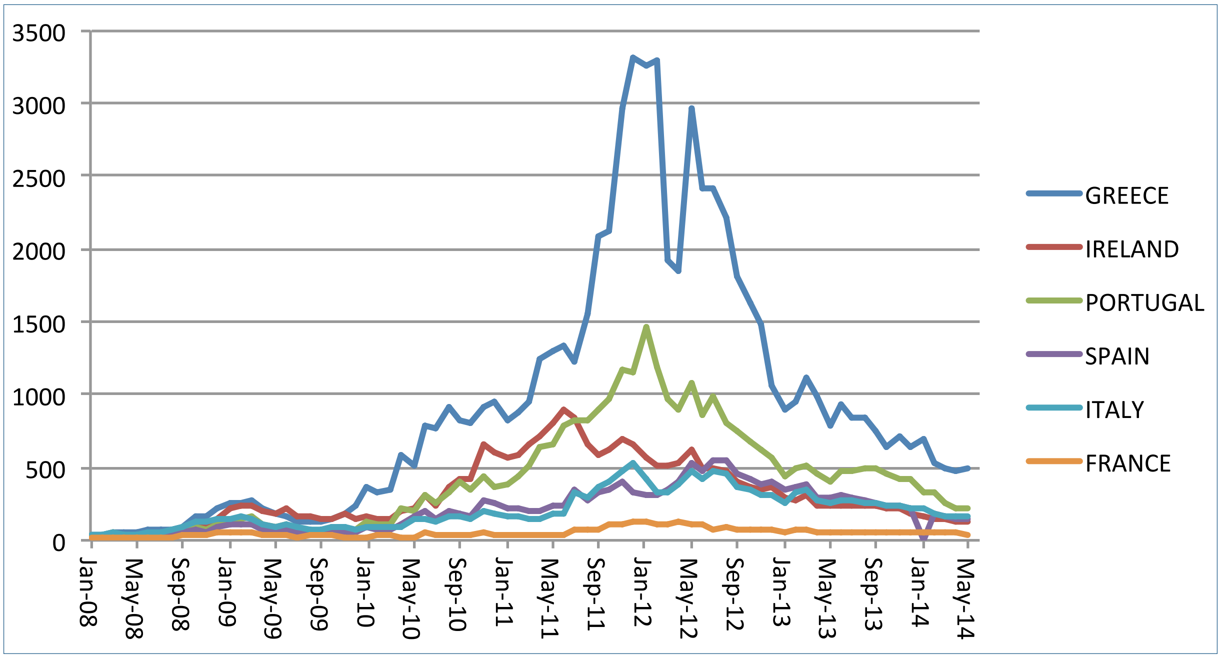
Euro area leaders agreed at their July 21, 2011 summit to bail in private creditors while retaining the voluntary character of the PSI through "reprofiling" of the debt, including maturity extensions and lower coupons. The IIF, a global association of financial institutions, had been previously consulted on debt-restructuring options and associated cash-flow benefits. The agreement called for a 21 percent reduction in the net present value (NPV) of the Greek debt, to be achieved through a menu of options involving a voluntary debt exchange for par or discount bonds. The net discounted present value of the payments stream was calculated to be identical under the various options. The exchange would only apply to bonds maturing until 2020, which constituted the bulk of Greek public debt. EU leaders committed to provide support on concessional terms.

The proposed deal would not reduce Greece's debt burden; by some calculations (using a lower discount rate), it would actually increase it (Zettelmeyer et al. 2013). Although the discount bonds offered an immediate debt writedown, they carried relatively high coupons that provided little debt relief over time. The deal was thus never implemented, and the parameters of a new deal, involving a 50 percent haircut, were agreed to at the October 26-27 EU summit. Ahead of the summit, the IMF issued a revised Debt Sustainability Analysis (DSA), which noted that the economy was adjusting through recession rather than growth-enhancing structural reforms, putting the fiscal targets at risk. A severe credit crunch and weak export markets contributed to lower-than-expected growth. The DSA projected a more gradual recovery, lower privatization receipts and delayed access to market financing compared to the July review. Based on these assumptions, the targeted reduction in the debt ratio to 120 percent of GDP by 2020 was beyond reach; therefore, the PSI parameters had to be adjusted to provide far greater debt relief.

The parameters of a new rescue package for Greece, including a 50 percent haircut on debt held by private bondholders, were agreed at the October 26-27, 2011 summit (European Council 2011). However, Prime Minister Papandreou resigned in early November, after his intention to secure public support for the new rescue package through a referendum was strongly rebuffed by euro area leaders. A three-party coalition government was formed with a narrow mandate to conclude negotiations on the program and the PSI before new elections were called in the early spring of 2012. The coalition government appointed a technocrat, former ECB Vice-President Lucas Papademos, as prime minister. Based on the new government's commitment to the program targets, a final disbursement under the original program was made in December 2011, bringing total disbursements to date to €73 billion out of the €110 billion committed, of which €53 billion was disbursed by euro area governments and €20 billion came from the IMF. No further disbursements were envisaged until the negotiations on a new program were completed.

The PSI's contribution to easing the euro area debt crisis was conditional on stronger financial backstops to contain market contagion. A strong firewall that would put to rest any doubts about whether the euro area had sufficient funds or political will to rescue the heavily indebted south was essential to regain market confidence. But the G20 summit in Cannes in early November 2011 and the subsequent EU summit in December failed to come up with agreement on an appropriate safety net, including an EU bank recapitalization plan and credible backstop facilities for Italy and Spain. Euro area credit spreads soared (see Figure 3).

Figure 3: Spreads over 10-year German Bond Yield



Data source: Bloomberg.

THE MARCH 2012 DEBT EXCHANGE

The May 2010 program for Greece projected that the debt ratio would peak at 149 percent of GDP and gradually decline to 120 percent by 2020 — the IMF's threshold for debt sustainability.[5] To return to this path, the second rescue package (agreed in March 2012) included "*a combination of private and official sector involvement to deliver enough debt relief to place debt on a trajectory to reach 120% of GDP by 2020*" (IMF 2012; emphasis in original). Greece was expected to complete a debt exchange with private bondholders prior to the approval of the arrangement, while euro area member states committed to provide financing on concessional terms for as long as it took to restore market access, provided the country fully implemented the stabilization program.

In contrast to the July proposal, which offered a menu of options, the revised PSI contained a single offer subject to a 90 percent acceptance requirement to secure deep debt relief. It sought to exchange €205 billion of eligible claims for a discount bond with a face value of 31.5 percent of the original claim, plus a "credit enhancement" consisting of short-term AAA-rated EFSF notes amounting to 15 percent of the face value of the original claim. The credit enhancement was the "official contribution" to the PSI, provided through a €30 billion loan to Greece on favourable terms under a bilateral co-financing agreement between the EFSF and Greece. In total, investors received 46.5 percent of the face value of their original claims, i.e., the writedown amounted to 53.5 percent (see Figure 4). As an added "sweetener," bondholders also received a detachable GDP-linked warrant.[6] The new GGBs were issued under English law with full creditor rights, with a maturity of between 10 and 30 years and a step-up coupon starting at two percent and gradually rising to 4.3 percent in the later years.

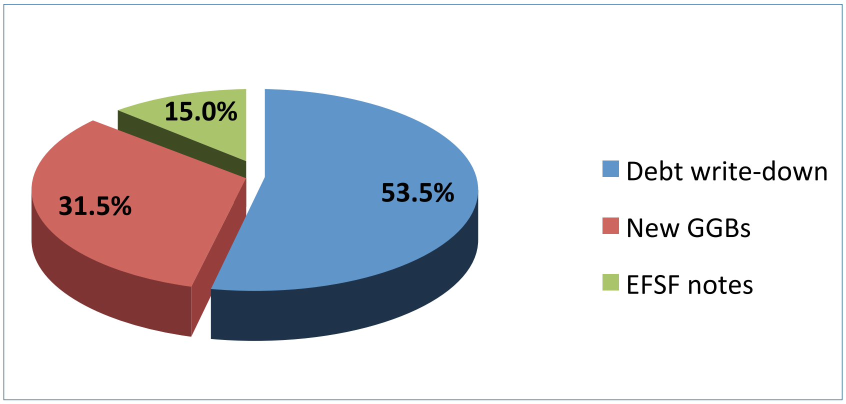
The Greek Ministry of Finance announced the terms of the exchange in late February 2012 and invited bondholders to tender their bonds by March 8.[7] However, the cash collateral and the GDP warrant were not sufficient sweeteners to entice the voluntary 90 percent participation needed to achieve the debt reduction target. Bondholders tendered only 85.8 percent of the Greek-law bonds and 69 percent of foreign-law bonds, falling short of the 90 percent threshold. With the consent of private creditors, the Greek government activated the CACs that had been retrofitted by an act of the Greek Parliament ("The Greek Bondholder Act," Law 4050/2012) to the bonds issued under Greek law, raising the participation of Greek-law bondholders to 100 percent of the total (€177 billion, see Table 1), after a supermajority of more than 66.67 percent signed up to the new terms, subject to

5 Defining a debt ratio of 120 percent of GDP as sustainable was arbitrary; it may have been chosen because no one wanted to imply that Italy's 120 percent debt ratio was unsustainable.

6 A GDP warrant is a floating-rate sovereign bond with a coupon linked to the country's growth performance as measured by real GDP. GDP warrants dampen the pro-cyclicality of government spending by reducing debt service payments in times of slow growth.

7 A fuller description of the features of the 2012 Greek debt exchange is provided in Xafa (2013) and Zettelmeyer et al. (2013).

Figure 4: Greek Debt Exchange — Credit Losses and Composition of New Claims (% of Face Value)



Source: Author.

a quorum of 50 percent of the face value of the bonds. Combined, these two thresholds required only that 33.18 percent (= 50% * 66.67%) of the face value of the bonds vote in favor. Accrued interest of €5.5 billion was paid with six-month EFSF notes.

In the case of foreign-law bonds, the CACs applied separately to each series of bonds and typically required 75 percent majority to approve the new terms — a tougher standard to meet.[8] Out of €28 billion of eligible foreign-law bonds, €6.4 billion (22.9 percent of the total foreign-law bonds and just 3.1 percent of total eligible debt) were not tendered in the exchange. But the deal went through anyway, since the 90 percent participation threshold for all eligible bonds was met. The ECB and EU national central banks (NCBs) resisted any debt writedowns and did not participate in the restructuring. In early 2012, they did an off-market swap of their GGBs for a new series of bonds with different International Security Identification Numbers but identical payment terms and maturity dates. The PSI exchange offer was for bonds issued by December 31, 2011, so their GGB holdings were excluded. However, in February 2012, the Eurogroup (the council of euro area finance ministers) agreed that NCBs would remit to Greece the profits on their GGB holdings, while the transfer of SMP profits (coupons and capital gains) remained optional for the time being (European Council 2012a).

Overall, the PSI extinguished €106 billion (54 percent of GDP), but it also generated €38 billion of losses for Greek banks that would need to be recapitalized (including the 53.5 percent face value loss and subsequent mark-to-market losses; see Table 2). The net debt reduction thus amounted to €68 billion (35 percent of GDP). Bank deposits and senior unsecured creditors were protected, as had been the case in the 2010 Irish bailout, but unlike the subsequent bank restructurings in Spain and Cyprus, which forced investors (and large depositors, in the case of Cyprus) to take losses. At end-2012, Greece's general government debt amounted to a still-high 157 percent of GDP, as the country relied heavily on official borrowing to service its debt and recapitalize its banks while GDP was still contracting. However, interest payments fell sharply as the new bonds carried low coupons and official financing was offered on concessional terms.

Table 1: Greek Debt Exchange, March 2012

	Euro (billion)	% of accepted bids
Eligible debt	**205**	
Greek law	177	
Foreign law	28	
Accepted bids	**198**	**100**
Greek law	177	
Foreign law	21	
Holdouts	**6**	
Extinguished debt	**106**	**53.5**
New GGBs	**62**	**31.5**
EFSF notes	**30**	**15.0**
Memo item: Non-participating creditors	**56**	
ECB	43	
NCBs	13	

Note: Totals may not add up to the parts due to rounding.

8 Foreign-law bonds consisted of 31 bond series issued under English law and one under New York law.

Table 2: Impairment Losses on GGBs
and State-related Loans under the PSI (million euros)

	Face amount of GGBs (1)	Face amount of state-related loans (2)	Total face amount (3)=(1)+(2)	PSI loss of GGBs (4)	PSI loss of state-related loans (5)	Total gross PSI loss (6)=(4)+(5)
Systemic banks	31,710	3,761	35,471	25,275	2,939	28,213
NBG	13,748	1,001	14,749	10,985	751	11,735
Eurobank	7,001	335	7,336	5,517	264	5,781
Alpha	3,898	2,145	6,043	3,087	1,699	4,786
Piraeus	7,063	280	7,343	5,686	225	5,911
Other banks	11,933	1,205	13,138	8,601	918	9,520
Total	43,643	4,966	48,609	33,876	3,857	37,733

Source: Bank of Greece (2012).

Holdout creditors are being repaid in full to avoid a messy Argentine-style litigation involving holdouts. Non-payment would trigger cross-default clauses written in foreign-law bond contracts, which require immediate payment of the entire outstanding amount in the event a payment is missed on another obligation. The risk that creditors might seize Greek assets abroad was not considered worth taking for the sake of €6.4 billion of claims held by the holdouts, which represented just 3.1 percent of total eligible debt. Nevertheless, clever lawyers left open this possibility by ensuring that the new GGBs are not cross-defaultable with the old GGBs, i.e., defaulting on a payment to the holdouts would not trigger a default on the new GGBs.

Although the payment terms on the Greek law bonds were not changed by an act of parliament, the retroactive change in bond contracts to include CACs gave rise to a credit event. The International Swaps and Derivatives Association (ISDA) ruled unanimously on March 9, 2012 that a restructuring credit event had occurred with respect to the Hellenic Republic, triggering payment of credit default swap (CDS) contracts (ISDA 2012). By then, the notional outstanding amount of CDS contracts between counterparties was less than €3 billion (US$3.7 billion). Some policy makers and market participants at the time thought that a Greek default would be equivalent to the failure of Lehman Brothers in September 2008. This expectation was misguided, as the CDS contracts on Lehman outstanding at the time of its failure amounted to US$75 billion, a multiple of the Greek CDS, so the direct impact of a Greek default could not possibly have had equally devastating consequences. Indeed, the triggering of CDS contracts turned out to be a non-event.

THE DECEMBER 2012 DEBT BUYBACK

Soon after the PSI and second rescue package were concluded, Greece entered a period of extreme uncertainty. The radical left political party Syriza rose in popularity, becoming the second-largest party in the run-up to the May 2012 national elections. Uncertainty intensified when the elections resulted in a hung parliament and had to be repeated in June. The new GGB prices plummeted to a trading range of 19 to 24 cents — near the levels at which the old bonds traded — as market participants assigned a high probability that Greece would exit the euro area, raising sharply the tail risk of a disorderly default. The market discounted a new default with an extremely low recovery value.

A three-party, right-left coalition government was eventually formed with a mandate to implement the policies needed to keep Greece in the euro area, but negotiations to reach a coalition agreement dragged on and uncertainty lingered. Implementation delays and a deepening recession drove the program off track. In November 2012, it was revised to extend the adjustment path by two years, i.e., the 4.5 percent primary surplus target needed to secure debt sustainability was delayed to 2016. With the debt path considerably worse than originally projected, in late November the Eurogroup gave the green light for a debt buyback scheme and offered debt relief to Greece through various modalities. Official debt relief (referred to as OSI [official sector involvement]) was provided by postponing interest payments due to the EFSF, reducing the interest margin over the three-month Euribor rate on the bilateral loans that funded the first rescue package (the Greek Loan Facility [GLF]) from 150 bps to 50 bps, deferring interest on EFSF loans by a decade, cancelling the 10 bps operating margin on EFSF loans, extending the maturities of EFSF and GLF loans, and passing on to Greece the income on the ECB's SMP portfolio as of 2013. OSI would be phased in over time, conditional on full implementation of the program. The Eurogroup committed to providing additional relief, if necessary, to ensure debt sustainability after Greece achieved a primary surplus (European Council 2012b).

OSI contributed €8.2 billion in additional financing over the period 2013–2016 — an amount that fell short of what was needed to fully fund the extended program. Its impact on the projected debt stock, estimated at 7.2 percent of GDP, was insufficient to achieve the original target of 120 percent of GDP by 2020 (European Commission 2012). The debt buyback scheme reduced the debt ratio by a further €21.1 billion (10.8 percent of GDP), bringing it closer to, but still above, the 120 percent target by 2020. Just over one-half of the €62 billion new GGBs outstanding were tendered at a reverse auction on December 11, 2012 in exchange for €11.3 billion six-month EFSF notes (including accrued interest; see Table 3). The weighted average price amounted to 33.8 cents per euro of face value, i.e., each euro of official funding extinguished €3 of privately held debt, providing significant debt relief (Public Debt Management Agency 2012a; 2012b; 2012c). Funding for the buyback was secured by using up the cushion built into the program, notably by postponing the buildup of a Treasury cash buffer and by foregoing the projected decline in the stock of T-bills needed to create room in bank balance sheets for new lending.

Table 3: Greek Debt Buyback, December 2012

Stock of new GGBs	€62.0 billion
GGBs tendered in the buyback	€31.9 billion
Cost of buyback*	€10.8 billion
Average price	33.8 cents
Net debt reduction	€21.1 billion
Net debt reduction (% GDP)	10.8 %

* Excluding accrued interest of €0.5 billion.

Although the buyback operation was voluntary (CACs were not invoked), Greek banks were asked to tender their entire holdings of GGBs to help achieve the debt reduction target. Banks had already marked the new GGBs below the buyback price, so no additional recapitalization needs arose from the buyback. Greek pension funds, which held €7 billion of new GGBs (11 percent of the total), did not participate in the buyback because their claims represented intergovernmental debt, and would thus not have affected general government debt.

ISSUES IN THE RESTRUCTURING

The Greek case is quite unique in the sovereign debt literature. First, by virtue of its euro area membership, which prohibits monetary financing of deficits, Greece was bankrupt in its own currency but unable to inflate its debts away. Second, the bulk of public debt was issued under domestic law. Sovereign debt in emerging markets typically is issued in foreign currency (or domestic currency lately) under foreign law. Greece's special features make its debt restructuring an unprecedented event of limited relevance to emerging markets.[9] However, it contains some important lessons for any future debt restructurings within the euro area.

Sovereign bonds governed by English law typically include CACs. However, most EU sovereigns issue bonds under domestic law, which has few creditor rights and does not include CACs. The fact that the bulk of Greek debt was issued under domestic law gave Greece enormous power to unilaterally amend the terms of the bonds through an act of parliament. Instead, Greece chose not to have a coercive restructuring, by retrofitting CACs in bond contracts without changing payment terms. A disorderly default, defined as a unilateral decision by the borrower to suspend debt service payments due to inability or unwillingness to pay, was avoided. Instead, a pre-emptive debt exchange was agreed to, minimizing taxpayer funding of the second rescue package.

TIMING

There is a heated debate on whether the debt restructuring should have taken place earlier to avoid paying maturing debt in full with official loans and to restore Greece's solvency. Between May 2010 and mid-March 2012, about €58 billion of GGBs matured, with redemptions funded by official loans. If the PSI terms had been agreed up front in May 2010, the public debt would have been cut by an additional €31 billion (53.5 percent haircut x €58 billion), equivalent to 16 percent of 2012 GDP (plus the interest savings from lower coupons).[10] This reduction would have lightened Greece's debt burden, although it is doubtful that it would have secured debt sustainability, even if it were politically feasible. Alternatively, the same debt relief (€106 billion) would have been secured with a smaller haircut (41.4 percent) on a larger stock of eligible debt (€256 billion). A smaller haircut, in turn, would have limited the losses inflicted on Greek banks. It is worth examining these issues in greater detail.

9 To my knowledge, only Jamaica has restructured foreign-currency debt issued under domestic law. In a "national debt exchange" launched in February 2013, Jamaica restructured local currency bonds and locally issued US dollar-denominated bonds amounting to 64 percent of GDP. However, the exchange did not include bonds issued in foreign jurisdictions or held by non-residents. More than half of the total public debt was locally issued debt, held mainly by domestic residents, with financial institutions holding about half of the total. Non-residents held less than 15 percent of the total debt (IMF 2013b). Russia and Uruguay restructured locally issued debt in 1998 and 2003 respectively, but this was denominated in local currency.

10 Outstanding GGBs (including guaranteed debt of public enterprises but excluding T-bills) at end-April 2010 amounted to €319 billion, while eligible debt included in the March 2012 debt exchange amounted to €205 billion. However, €56 billion of the original debt was held by the ECB and national central banks, and was excluded from the restructuring; therefore, maturities funded by official loans amounted to: €319 billion - (€205 billion + €56 billion) = €58 billion.

DEBT SUSTAINABILITY

Even if additional debt relief equivalent to 16 percent of GDP could have been secured up front, it is doubtful that it would have restored Greece's solvency. The IMF's original DSA, published in May 2010, showed that the debt ratio would peak at 149 percent of GDP in 2013 and decline to 120 percent by 2020. This was based on a projected growth path that seemed plausible at the time, but turned out to be worse than even the adverse DSA scenario (see Figure 5). This outcome was partly due to unanticipated events: the recession deepened as a result of political uncertainties, a loss of confidence, a sharp drop in bank deposits and a severe credit crunch (see Figure 6). To make things worse, the growth-oriented structural reforms built into the program that could have mitigated the output decline were not implemented. As a result, the debt ratio post-PSI rose to 176 percent of GDP in 2013, i.e., 27 percent of GDP above the original target (which did not envision PSI), and five percent of GDP above the end-2011 level, when the PSI was being negotiated (see Figure 2).

SIZE OF HAIRCUT

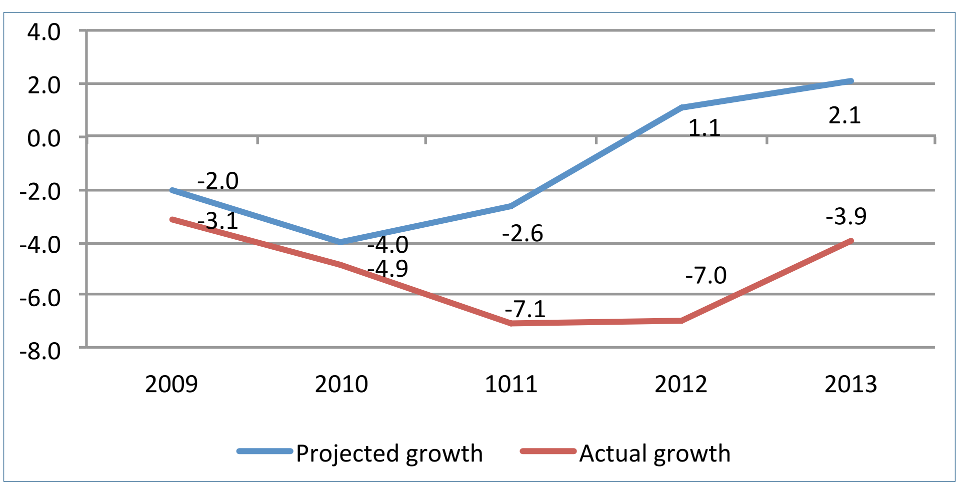
It is equally doubtful that private bondholders would have accepted such a large haircut up front, given that they only reluctantly accepted a 21 percent NPV reduction as late as July 2011. In May 2010, the program's funding needs were estimated at €110 billion to fully cover debt service costs, plus a portion of the primary fiscal deficit, during the three-year program period. Asking bondholders to foot the lion's share of the funding needs through a 53.5 percent haircut on their holdings would have been seen as an unfair and unnecessary burden-sharing arrangement. By the spring of 2011, however, the need for a deep haircut to restore sustainability had become obvious. Creditors could have been persuaded to accept a deep haircut sooner, under the threat of a change in the terms of the bonds by an act of parliament if necessary. After all, the PSI that was eventually agreed to was not entirely voluntary: in the words of the CEO of Commerzbank, calling it voluntary is the equivalent of "obtaining a voluntary confession at the Spanish inquisition" (Longwave Group 2012). The IMF, in turn, could have facilitated a timely and adequate debt restructuring by revising its DSA sooner: GDP growth was revised downward by less than one percent per year in 2011-2012 between the third and fourth reviews in March and July 2011 respectively, when the euro area had already entered a period of zero or negative growth, and was then slashed by a further two percent per year on average in the October DSA, although little new information had become available.

NON-PARTICIPATION OF ECB, NCBS

It is worth noting that if the ECB and NCBs had accepted a restructuring on the same terms as private bondholders in March 2012, the additional debt reduction would have been roughly equal to the gain from introducing the PSI earlier, in May 2010 (53.5 percent haircut * €56 billion of bonds held by the ECB and NCBs = €30 billion, compared with a €31 billion gain from an earlier restructuring; see Table 1).[11] In other words, the delay in the PSI would not have added to Greece's debt burden if the ECB and NCBs had agreed to participate. While accepting the crisis-management role of the ECB's SMP holdings, the IIF considers that the exclusion of the NCBs from the debt exchange deviated from the principle of non-discrimination, since their GGB holdings reflected traditional financial investments similar to those of private creditors (IIF 2012).

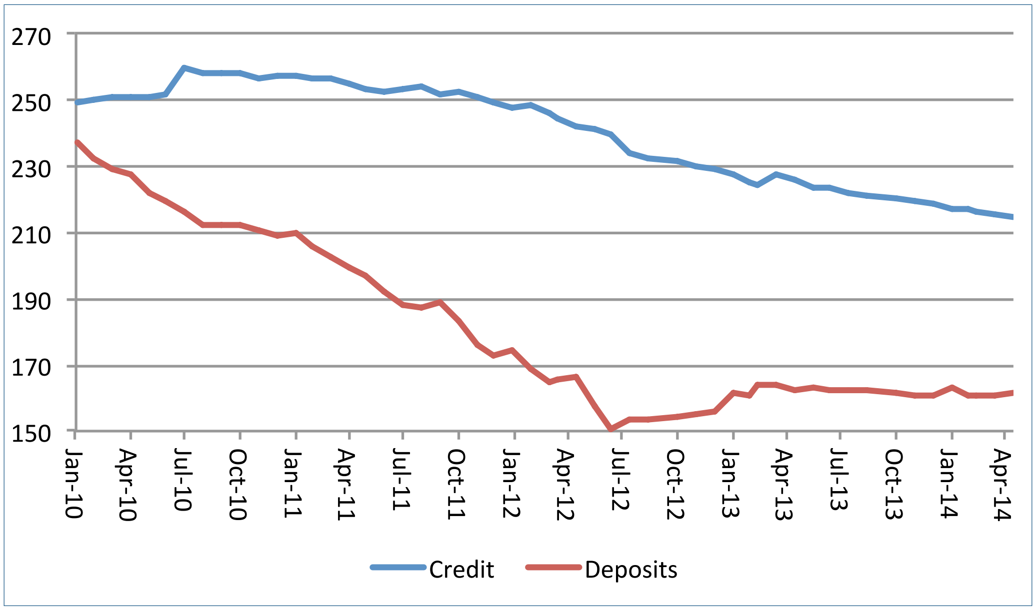
11 To be fair, the ECB and NCBs returned to Greece the coupon and capital gains on GGBs from 2013 onwards, but this fell short of the PSI haircut because these bonds had been purchased earlier, at a much lower discount from par.

Figure 5: Greece — Actual and Projected GDP Growth Path (%)



Data sources: IMF (2010) and Hellenic Statistical Authority (ELSTAT).

Figure 6: Greece — Private Sector Bank Deposits and Credit Outstanding (€ billion)



Data source: Bank of Greece, Bulletin of Conjunctural Indicators.

The exposure of core euro area banks, especially French and German banks, was a key reason why a debt restructuring was not attempted sooner. The IMF's own assessment of the timing of the restructuring in the ex-post assessment of the 2010 Stand-by Agreement was that "in retrospect, the program served as a holding operation" that allowed private creditors to reduce exposures "leaving the official sector on the hook" (IMF 2013c). The IMF report considers that, faced with the danger of contagion, the program had been a necessity, even though the Fund had misgivings about debt sustainability. The report clearly states that "the euro partners had ruled out debt restructuring and were unwilling to provide additional financing assurances" in May 2010 — a statement that was not well received by European policy makers (*Financial Times* 2013). The conflict between the need to support Greece and the concern that the debt was unsustainable was resolved by softening the criteria for exceptional access to IMF resources in systemic cases. The baseline scenario showed the debt to be sustainable, as required in all Fund programs, but the risks of a worse outcome were highlighted. Ultimately, the challenge faced by the Fund in dealing with Greece was how to reconcile its responsibility to support a systemic member of a monetary union that constitutes the second-largest global economic bloc with the obligation to treat all Fund members equally.

Focusing on Greece, Susan Schadler (2013) examines how the euro area crisis precipitated large IMF loans that violated the framework for exceptional access put in place following the 2001 Argentine crisis. The framework was meant to safeguard the resources of the IMF by setting out clear criteria that should be met before the IMF agreed to provide exceptionally large bailouts relative to a member country's IMF quota. Four criteria had been agreed to address capital account crises, including a requirement that the debtor country's debt would remain sustainable, with a good prospect for market re-access by the end of the program. However, in the case of Greece — whose request for access to IMF resources amounted to an unprecedented €30 billion (3,212 percent of quota)[12] — the debt sustainability criterion was waived based on the systemic concerns arising from spillover risks if the program was not approved.

As discussed in the section "Background to the 2012 Greek Debt Restructuring," there was not yet overwhelming evidence of the need for a debt restructuring in May 2010. There is room for reasonable disagreement on whether the projected fiscal and growth paths were achievable, but there is little evidence of a pre-cooked conclusion to make the debt dynamics appear sustainable. The 25 percent cumulative decline in Greece's real GDP over the six-year period from 2008 to 2013 was above the upper range of most analysts' projections, and unprecedented among advanced countries since the Great Depression of the 1930s. Calling for a deep haircut up front, under threat of legislative action, would have been seen as unnecessary and deeply coercive. But delaying the restructuring beyond mid-2011, when it became clear that Greece's debt was unsustainable, was unjustified. The delay reduced the stock of privately held debt subject to a haircut, possibly making an official debt restructuring inevitable down the road.

12 The previous record had been set by the IMF bailout of Korea in December 1997, amounting to US$21 billion (1,939 percent of quota).

VOLUNTARY RESTRUCTURING VERSUS DISORDERLY DEFAULT

The ECB was the most vocal opponent of a debt restructuring in the euro area, whether voluntary or not. The ECB argued that a forced PSI would hurt bank balance sheets, weaken growth and trigger contagion to other heavily indebted countries (Spink 2012). These concerns receded only after EU banks were recapitalized and EFSF/ESM resources were increased in 2012 to build an effective firewall against contagion.

The ECB's strong opposition to debt restructuring is evident from a letter ECB President Jean-Claude Trichet addressed to Greek Prime Minister George Papandreou on April 7, 2011, excerpts of which were published in the Greek press:

> I am writing to inform you about the grave risks that the Greek government would take if it were to pursue at this juncture a rescheduling of its debt, *even on a voluntary basis* [...] Pursuing such a strategy would put Greece's refinancing in euro at major risk. The ECB Governing Council's decision to suspend the rating requirement for securities issued or guaranteed by the Greek government was based on the current program, and the current program being on track. No debt rescheduling is compatible with the current program. Therefore the suspension would no longer apply. (Palaiologos 2014; emphasis added)

According to Trichet, "even a voluntary debt rescheduling could lead to considerable downgrades of all financial assets in Greece," as a result of which the country would be "at immediate risk of losing the bulk of its collateral for monetary policy transactions." Finally, a debt rescheduling "could trigger very large losses for Greek banks, which in the absence of sufficient recapitalization funds might have to be suspended from monetary policy transactions" (ibid.).

Essentially, Trichet informed the Greek government that even a maturity extension would lead the ECB to pull the plug on Greek banks, since they would lack appropriate collateral as well as the capital adequacy needed to access the ECB discount window. The consequence of such a move would be to force Greece to leave the euro area and print its own money. Faced with massive deposit withdrawals and loss of market financing, Greek banks relied on the central bank to provide the liquidity needed to fund their operations. As already noted, the ECB eased its collateral rules during the crisis by accepting sovereign bonds rated below investment grade. However, a "disorderly default" — a failure to meet sovereign debt service obligations — would immediately render GGBs worthless, driving the ECB to cut off its funding. This would force Greece to exit the euro area and print its own currency to fund its economy.

Under a national system, the government can force the central bank to exercise its lender-of-last-resort function during a crisis. When the sovereign is threatened, it can force the central bank to provide liquidity, as happened in Argentina in 2001. This is not the case in a monetary union, where individual participating governments have no direct control over the common central bank. Unlike Argentina or other emerging markets, Greece did not have the power to force the ECB to provide liquidity even during a voluntary restructuring, let alone a disorderly default.

In October 2011, six months after Trichet delivered his stern warning to the Greek authorities, and a few days before he retired, the ECB was convinced to accept a restructuring of the Greek debt, without which official creditors would have been unwilling to provide a second bailout. Greece's credit rating was downgraded to "SD" (Selective Default) when the PSI was concluded in March 2012, with no disruption in Greek banks' access to liquidity, which continued through the Exceptional Liquidity Assistance (ELA) window of the national central bank. The ECB's fear that even a voluntary restructuring would be disruptive turned out to be unduly pessimistic. Nevertheless, the decision to continue funding Greek banks via ELA was only taken after anxious deliberations. The exclusion of ECB holdings of GGBs from the restructuring, and the setting aside of €50 billion for the recapitalization of Greek banks in the second bailout, were key factors in the ECB's decision to accept the inevitable.

CONTAGION

The European debt crisis started in Greece, but subsequently engulfed several countries. The May 2010 rescue package for Greece set off an adverse feedback loop in peripheral euro area countries with weak financial systems and large external financing needs. Markets started to reassess their liquidity and solvency, driving their refinancing costs to unsustainable levels. Ireland adopted an EU/IMF-supported program in November 2010, followed by Portugal in May 2011. In mid-2011, when discussions on the Greek PSI were launched, the crisis spread to Spain and Italy, despite official efforts to portray the Greek case as exceptional. Cyprus adopted (belatedly) an EU/IMF-funded program in May 2013. The crisis highlighted the role of spillovers from sovereign default risk to financial intermediation in deepening the recession. Reduced sovereign solvency severely affected bank funding conditions, while the consequent slowdown in economic activity increased non-performing loans and further deteriorated the outlook for public finances.

The first hint of a private sector contribution to the funding of euro area adjustment programs came at the Franco-German summit in Deauville in October 2010, when German Chancellor Angela Merkel and French President Nicolas Sarkozy agreed that private investors should contribute to the funding of adjustment programs in the euro area. Following up on this initiative, euro area leaders agreed at their March 2011 summit to set up a permanent orderly workout mechanism by mid-2013 (the ESM). To calm the markets, they declared that there would be no debt restructuring before mid-2013, but this commitment was not credible given widespread concerns over Greece's solvency. Contagion risks increased after the Greek program went off track in mid-2011 and discussions on PSI were launched, notwithstanding earlier statements to the contrary. By that time, markets had become much more downbeat on periphery growth prospects and there were concerns that political tolerance limits would soon be hit if unemployment continued to rise. The failure of policy makers to build an effective firewall by leveraging the EFSF deepened the crisis. Credit spreads soared in late 2011 following the failure to reach agreement on a common backstop at the November G20 meeting in Cannes and at the subsequent euro area summit in December.

Spreads flared up again in May-June 2012, when Greece's radical opposition party Syriza, which rejected the EU-IMF-funded program, appeared likely to win the June 17 elections. Market participants attached a high probability to "Grexit" and feared it would lead to the demise of the euro. In late June 2012, the European Council committed to a specific, time-bound road map for the achievement of a genuine Economic and Monetary Union (European Council 2012c), followed by ECB President Mario Draghi's statement in July that he would do "whatever it takes" to save the euro. Interpreted as a commitment to provide a theoretically infinite backstop, Draghi's statement and the subsequent announcement of a bond-buying program, known as Outright Monetary Transactions (OMT), in early September[13] had an immediate impact in calming markets. Credit spreads tightened significantly in all peripheral countries, even though the Greek program remained off track until it was extended by two years in December 2012 to permit a slower pace of adjustment.

As the crisis unfolded, banking system fragility came to the fore. Overexpansion of balance sheets and risk accumulation had raised concerns about European bank strength before any doubts about Greece's debt sustainability surfaced. When the global financial crisis hit, pressure on banks to deleverage was intensified by the initiative led by the European Banking Authority (EBA) to raise capital ratios. After a couple of failed attempts by the EBA, a credible, forward-looking assessment of banks' asset quality to identify capital shortfalls was delayed until 2014, as was a clear plan to meet capital requirements through a common backstop if necessary. Progress on banking union, needed to break the bank-sovereign link and reverse fragmentation, was delayed, and remains incomplete.

In this turbulent environment, it is worth assessing whether the fear of a high risk of spillover effects from a Greek PSI was justified. We distinguish between two potential transmission channels:

- losses for euro area banks that could have important implications for systemic instability; and
- higher perceived default risk in other peripheral euro area countries.

Bank for International Settlements data on cross-country bond holdings suggest that European banks held some €25 billion of GGBs at end-June 2011, when the PSI was being negotiated. Greek banks held €60 billion, and the ECB about €50 billion, with the rest held by other institutional investors, mainly pension funds, insurance companies and hedge funds. These figures suggest that Greek banks would suffer the largest losses from a credit event. Importantly, potential losses for European banks appear too small to pose a systemic threat. Concerns about contagion through this channel therefore appear exaggerated, especially since banks had already reduced or written down their exposure to Greece by that time. An earlier restructuring, at the outset of the program in May 2010, would have generated bank losses on €75 billion of GGBs (assuming the ECB acquired all its GGBs from EU banks) — still not a disastrous event in a banking system with €35 trillion of assets. Only the fear that other peripheral countries might follow suit could potentially destabilize the banking system, but this would not happen if an adequate firewall was in place.

Default concerns about Greece affected the borrowing costs of other peripheral countries exhibiting similar weaknesses. Higher funding costs, in turn, worsened their debt dynamics and led to credit downgrades that also affected the corporate sector. Without a common backstop to keep borrowing costs low, the risk of insolvency could turn into a self-fulfilling prophecy. However, a recent IMF working paper (González-Hermosillo and Johnson 2014) finds that Greece did not really matter much, despite widespread concerns that it played a pivotal role. The paper investigates empirically the effects of spillovers from the key euro area countries to Germany as the core country and vice versa. The paper finds that changes in

13 The OMT program of euro area sovereign bond purchases in the secondary market differed from its predecessor, the SMP program, in two important respects: it was subject to appropriate conditionality under an EU/IMF-supported program, and ECB bond purchases did not have seniority over private bondholders (ECB 2012).

Greece's sovereign CDS[14] had no significant effect on Germany's sovereign CDS (a proxy for systemic stability), despite initial widespread concerns about such linkages. Greece, apparently, is viewed as too small to destabilize Germany or the euro area, in contrast to Italy and Spain, even though their risk profile — as reflected in their credit spreads — was perceived by markets as comparatively more robust.

There is little doubt that the demise of the euro would have given rise to a major global crisis. Based on the effect of spillover channels that operated in past distress episodes, the IMF estimated that the impact of a Greek exit depended on the effectiveness of the European firewall and inherently unpredictable factors such as the possibility of bank and repo-market runs (Broner et al. 2013). A shock similar to the Long-Term Capital Management collapse in 1998 or the Scandinavian banking crisis of the early 1990s would produce a euro area output loss of 1.5–3 percent, with a potentially higher impact if Greece's exit turned out to be a catastrophic event. The declining exposure of the private sector to Greece and the stronger European firewall should make a catastrophic scenario less likely, but it is impossible to establish whether contagion risk would be limited and manageable. However, there is evidence that the likelihood of spillovers in the event of a Greek exit and default has declined over time; the correlation between credit spreads has fallen, suggesting that idiosyncratic Greek events may not affect other countries.

Overall, the Greek experience shows that common backstops and supportive crisis-management institutions are necessary for an orderly restructuring to take place smoothly in a monetary union, without major contagion effects. The two instances in which credit spreads surged to all-time highs were not triggered by the Greek PSI, but by the failure to agree on a common backstop (November-December 2011) and the fear of Grexit (May-June 2012) (see Figure 3). Market pressures continued after the Greek PSI was successfully completed in March, until the risk of Grexit and euro area break-up receded. Draghi's statement in July and the OMT announcement in early September marked the turning point in the crisis. The bond market rallied even though the Greek program remained off track until December, suggesting that markets paid far more attention to the potentially infinite firewall offered by the ECB than the status of the Greek program. As it turned out, Greece re-accessed capital markets in mid-April 2014, issuing a €3 billion five-year bond with a 4.95 percent yield, against gloomy predictions of delayed market re-access (Porzecanski 2012).[15] Shortly thereafter, Greek banks were able to raise €8.5 billion of new equity capital from private investors ahead of the ECB's Asset Quality Review. Following up on the Eurogroup's November 2012 commitment, on May 5, 2014, Greece tabled a formal request for further official debt relief through maturity extensions and interest rate reductions, based on the early achievement of a primary budget surplus in 2013. At end-2013, Greek public debt due to official creditors, including the ECB and NCBs but excluding the IMF, amounted to 73.1 percent of the total (see Figure 7).

SENIORITY

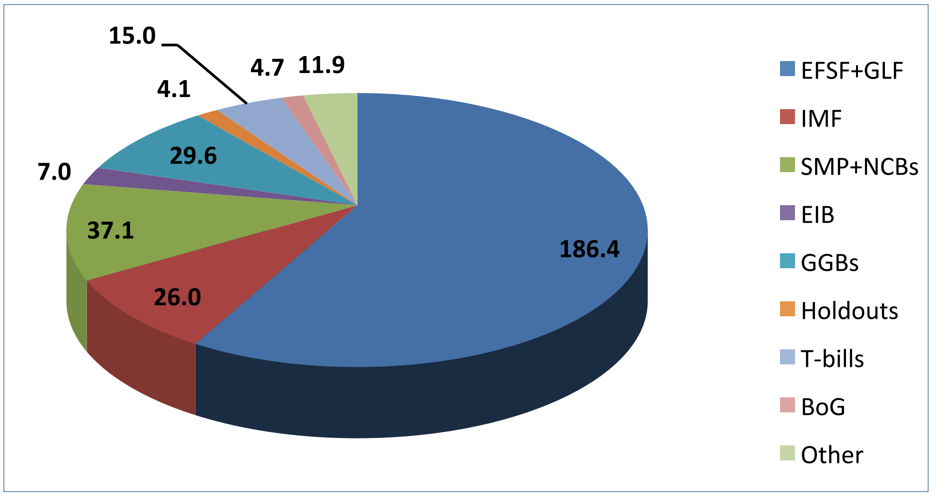
Seniority of official creditors over private bondholders creates subordination risk and makes a return to market financing more difficult, because private creditors would be reluctant to provide new financing that would be junior to official debt in any future debt restructuring. Nevertheless, official creditors providing emergency assistance went from *pari passu* status under the EFSF, set up in late June 2010, to preferred creditor status under the ESM Treaty that took effect on October 8, 2012.[16] While understandable politically, the change in the seniority status of official loans would make market re-access more difficult. Interestingly, the ECB went the opposite way at the exact same time: ECB bond purchases under the OMT program, launched in September 2012, were given *pari passu* status, in contrast to the SMP launched in May 2010, in which the ECB had senior status (see Table 4). ECB President Draghi clearly understood the risk that subordination posed for private bondholders and addressed their concerns by terminating the ECB's seniority.

14 A CDS is an agreement that the seller of the CDS will compensate the buyer in the event of a loan default or other credit event. The buyer of the CDS pays an insurance premium (the CDS "spread") to the seller and, in exchange, receives a payoff if the loan defaults.

15 Greece's recent five-year issue was oversubscribed partly because very little debt matures over the life of the bond, implying that investors enjoy de facto seniority. Expectations of ECB quantitative easing also played a role, as did geopolitical concerns about the deteriorating outlook in Turkey and Ukraine. But Greece has to consider the cost of accessing the bond market, which is much higher than the rate it pays on EFSF and IMF loans.

16 Programs in effect when the ESM Treaty was signed would be grandfathered by maintaining the *pari passu* status of euro area creditors: "In the event of ESM financial assistance in the form of ESM loans following a European financial assistance program existing at the time of the signature of this Treaty, the ESM will enjoy the same seniority as all other loans and obligations of the beneficiary ESM Member, with the exception of the IMF loans" (European Council 2012d, Paragraph 13 of the preamble to the Treaty).

Figure 7: Greece — Breakdown of Public Debt by Creditor, 2013 (€ billion)



Data source: Public Debt Management Agency.

Table 4: Euro Area — Seniority Status of Official Funding

	EFSF/ESM	ECB
May/June 2010	*pari passu* (EFSF)	senior (SMP)
September 2012	senior (ESM)	*pari passu* (OMT)

Unlike the IMF, the EFSF had the same standing as any other sovereign claim on the country, in recognition of the fact that private investors would be reluctant to lend to the country concerned if there were too many preferred creditors. By contrast, the 2012 ESM Treaty stated explicitly that ESM claims would enjoy seniority over private creditors, but would be junior to IMF loans.[17] The change in seniority status was apparently dictated by the reluctance of euro area member states to endorse the ESM Treaty in its absence. The IIF has called for the removal of the preferred creditor status of official euro area lenders to help restore full access to capital markets and re-establish fair burden-sharing among creditors (IIF 2012).

In contrast to the EFSF/ESM, the role of the ECB's indirect lending to governments was not to provide funding or ease monetary conditions (bond purchases were sterilized), but to stabilize bond prices and enable sovereigns who had not lost market access to borrow at reasonable rates. The SMP consisted of interventions in the form of secondary market purchases of sovereign bonds issued by five troubled debtor countries: Greece, Ireland, Portugal, Spain and Italy. Bonds with a face value of about €220 billion were acquired by the ECB between the program's inception and its termination in early 2012.

The decision establishing the SMP was silent on the question of seniority (ECB 2010b), but it soon became clear that the ECB claimed de facto seniority. The ECB's seniority status gave rise to subordination risks for private bondholders, undermining the ECB's efforts to put a floor on bond prices. On one hand, ECB bond purchases provided a bid to the market, but on the other, they scared off investors by shrinking eligible debt subject to restructuring. A recent study found that the repeated interventions had an impact ranging from -1 to -2 bps for Italy and -17 to -21 bps for Greece (Eser and Schwaab 2013). Given the scale of purchases, this impact appears negligible.

ECB President Draghi, who succeeded Trichet in November 2011, terminated the SMP in early 2012, when it became clear that the Italian government viewed the program as an alternative, rather than a supplement, to reform efforts, and later replaced it with the OMT, which is subject to IMF/EU conditionality. In contrast to the SMP, the OMT program includes a *pari passu* clause — similar to that included in the EFSF Treaty — to address investor concerns about the relative ranking of their claims that could reduce their appetite for euro area bonds. Although the OMT program remains unutilized to this date, it had a powerful impact on bond spreads. However, the ECB's possible future participation in "voluntary" debt restructurings, which might be considered as financing of government deficits, remains untested. To overcome any potential conflicts with the ECB's mandate, the ESM could extend guarantees to the ECB, but this remains an open question.

17 Paragraph 13 of the preamble to the ESM Treaty states that "the ESM 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" (European Council 2012d). "Like the IMF, the ESM will provide stability support to an ESM Member when its regular access to market financing is impaired or is at risk of being impaired. Reflecting this, Heads of State or Government have stated that the ESM 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. This status will be effective as of the date of entry into force of this Treaty" (ibid.).

ACTIVATING CACS AND TRIGGERING CDS

As discussed, CACs had to be retrofitted in Greek law bonds and activated to reach the 90 percent minimum participation required to go ahead with the debt exchange. The IIF stresses that "retroactive legal changes to unilaterally modify the terms and conditions of financial contracts may undermine the integrity of financial markets and the sanctity of contracts" (IIF 2012). However, it recognizes that retroactive bond contract changes can be accepted by private creditors if a voluntary debt restructuring agreement was reached through good-faith negotiations prior to such unilateral contract amendment. This was indeed the case in the Greek debt restructuring, in which the activation of CACs was put to the approval of private creditors as an exit clause under the debt exchange offer and was endorsed by a large majority (85.8 percent) of the holders of Greek-law bonds to maximize participation.

Following the exchange, all new sovereign bonds issued by euro area members are required to have CACs to facilitate bail-in of private creditors and avoid a forced restructuring through a change in domestic law.[18] However, the bulk of existing debt in the euro area's heavily indebted countries still consists of domestic-law bonds. The risk of a repetition of a Greek-style debt restructuring has, therefore, not evaporated.

Nevertheless, the Greek debt restructuring was not nearly as disruptive as feared. For the few weeks that Greece remained in default, GGBs were ineligible as collateral for ECB operations, but liquidity to Greek banks continued to be provided through ELA. Activating the CACs and triggering the CDS was also a non-event, as the net notional amount of CDS contracts reportedly amounted to less than €3 billion (1.5 percent of accepted bids). The CDS payouts were a fraction of the CDS auction and the insurance premium that the writers of the CDS had already earned. Fears that triggering the CDS would lead to contagion by bankrupting the institutions that had written CDS contracts (similar to American International Group in the United States) were, therefore, exaggerated. On the contrary, if the ISDA had not called the PSI a restructuring credit event, risk managers would no longer accept CDS contracts as adequate insurance against sovereign exposure, triggering a sell-off and spread-widening in other peripheral euro area credits.

AGGREGATION CLAUSES AND THE HOLDOUT PROBLEM

Largesse toward holdout creditors, who are being repaid in full after the Greek debt restructuring, has triggered a reconsideration of aggregation clauses in bond contracts. In a parallel development, the case of *NML Capital vs. Argentina* that is being litigated in US courts[19] has demonstrated that holdout creditors can have considerable leverage to frustrate a debt-restructuring agreement after it has been concluded. These cases have fuelled the debate focusing on the need to minimize the potential for holdout creditors to block or frustrate a comprehensive sovereign debt restructuring.

In Greece's case, the difference in governing law provided de facto seniority to foreign-law bonds because the built-in aggregation clauses made them much harder to restructure. English-law bonds require a majority of between 67 and 75 percent to accept the new terms, with voting conducted bond by bond. The CACs retrofitted in the Greek-law bonds required 66.67 percent of bondholders, aggregated across all bond series, to accept the new terms for the restructuring to go ahead, subject to a 50 percent quorum. With €177 billion of local law bonds eligible for restructuring, acquiring a blocking minority would be prohibitive. By contrast, few issues of foreign-law bonds exceeded €1 billion, making it much easier for a creditor, or group of creditors, to block the deal. The problem was exacerbated by investors who acquired blocking positions for the sole purpose of holding out and demanding full payment for their bonds.

The fact that holdouts were paid in full drove a wedge between local-law and foreign-law bonds in other heavily indebted euro area countries. Gulati and Zettelmeyer (2012) have proposed a voluntary exchange of local-law for foreign-law bonds in heavily indebted euro area countries, offering greater contractual protection to bondholders in exchange for a reduction in the debt burden. All new bonds issued by euro area countries after January 1, 2013 must include CACs.[20] The features of the euro-CACs make it easier to reach a restructuring agreement compared to English law or New York law bonds by having a lower majority requirement in each bond series to change the terms (66.67 percent versus 75 percent voter approval, based on the face value of the original claims), and by including a cross-series modification mechanism that

18 Euro-CACs are discussed in detail in the next section.

19 The case concerns holdout creditors who are demanding full payment on their Argentine bonds issued under New York law by threatening to seize debt service payments to bondholders who participated in the 2005 Argentine debt exchange.

20 Article 12 of the ESM Treaty provides for the mandatory inclusion of standardized and identical CACs in all new euro area sovereign bonds, irrespective of their governing law: "Collective action clauses shall be included, as of 1 January 2013, in all new euro area government securities, with maturity above one year, in a way which ensures that their legal impact is identical" (European Council 2012d). The motivation is clear: By facilitating debt restructurings, CACs can shift some of the costs of financial distress on to private creditors. In fact, the preamble to the ESM Treaty explicitly calls for "an adequate and proportionate form of private sector involvement [...] in cases where stability support is provided accompanied by conditionality in the form of a macro-economic adjustment program" (ibid.).

constitutes a weak aggregation clause.[21] Specifically, modification of payment terms in all of the sovereign's bonds occurs simultaneously, provided an overall vote of 75 percent across all the different series of bonds is achieved and a minimum vote of 66.67 percent is reached in each individual bond. For the time being, however, the bulk of outstanding debt in most euro area countries remains under local law without CACs. Over time, as the old debt matures, markets will become less fearful of a forced restructuring via legislative action, thus reducing the risk premium embedded in bond prices.

Although a clear improvement over the existing market standard, the euro-CACs on the new debt have been criticized as remaining vulnerable to the holdout problem by putting too much emphasis on supermajorities in individual bond series instead of permitting activation when an aggregate threshold is met across all bondholders (Bradley and Gulati 2012). If so, the holdout problem will persist unless euro-CAC clauses are softened further to facilitate a restructuring. To discourage litigation by holdout creditors, Buchheit, Gulati and Tirado (2013) have proposed an amendment to the ESM Treaty to provide immunity to a debtor country's assets from attachment by holdouts.

Initiatives underway in a number of fora, including the IMF, the IIF, the US Treasury and the International Capital Markets Association, aim to set a better market standard for CACs. The restructuring of the Greek-law bonds demonstrated that the ability to aggregate bonds across all series essentially gives rise to an up or down vote, thus eliminating the holdout problem altogether. Drawing from the Greek case, the IMF has proposed exploring "the feasibility of replacing the standard two-tier voting thresholds in the existing aggregation clauses with one voting threshold, so that blocking minorities in single bond series cannot derail an otherwise successful restructuring" (IMF 2013a). However, this approach may be too heavy-handed from the creditors' perspective, insofar as it does not offer any differentiation across bondholders depending on the maturity of their claims. Subjecting all bonds to a uniform haircut, irrespective of maturity, implies a higher NPV loss on short-dated bonds compared to longer-dated bonds. Holders of short-dated bond series should, thus, be given the opportunity to reject the terms, or be offered a lower haircut, without blocking the entire deal. As noted in the IMF report, "consideration could be given to making the contractual framework more effective, including through the introduction of more robust aggregation clauses into international sovereign bonds, bearing in mind the inter-creditor equity issues that such an approach may raise." These issues illustrate the need for any new market standard to achieve a balanced treatment of debtor and creditor rights by including aggregation clauses and lowering voting thresholds on one hand, while maintaining a series-by-series majority approval voting safeguard on the other.

THE CREDIT ENHANCEMENT

The "credit enhancement" was similar to the "principal enhancement" in debt exchanges concluded during the Latin American debt crisis of the 1980s. Debtor countries purchased risk-free, zero-coupon bonds issued by the US Treasury, which were pledged to guarantee repayment of the principal of the Brady bonds they issued. This was one of the options proposed by Buchheit and Gulati (2010) to restructure the Greek debt. What made the principal enhancement through collateral attractive in the late 1980s, when the Brady bonds were first issued, was the fact that the prevailing high interest rates made zero-coupon bonds exceptionally cheap in NPV terms. Unfortunately, the same did not apply in the early 2010s, when interest rates reached a historical low, thus making principal enhancement through collateral impractical.

As the new GGBs were uncollateralized, bondholders would still hold low-rated Greek credit risk after the exchange. To provide a sweetener, official creditors offered €30 billion in short-term EFSF notes as part of the deal, while also strengthening creditor rights through a co-financing agreement, which called for simultaneous and proportional debt service payments to bondholders and the EFSF. The EFSF loan ranked *pari passu* with the GGBs, implying that if Greece defaulted on the GGBs it would also default on the EFSF, with serious consequences for continued official support to Greece. Additional comfort to creditors was provided by the fact that a portion of official loans offered in the March 2012 rescue package were disbursed into a "segregated account" at the Bank of Greece, earmarked for debt service. Without the EFSF credit enhancement, bondholders probably would not have agreed to such a deep haircut. Moreover, the new bonds issued after the exchange were not cross-defaultable with the old bonds, so their holders were protected in the event Greece defaulted on the holdouts.

With regard to the detachable GDP warrant, it is too soon to tell how valuable a sweetener it will turn out to be. The warrant offers the potential of supplementary coupon payments linked to Greece's GDP growth, but no payments are likely to be triggered before 2022 at the earliest, when Greece's nominal GDP may reach the minimum threshold of €266 billion, from €193 billion in 2012. After that, the warrant will pay in any given year if real GDP growth exceeds a reference rate for that year. Modelled on the

21 The euro area voting threshold is set at 75 percent of aggregate principal amount outstanding represented at the meetings (with a quorum of 66.67 percent of outstanding principal). In addition, there is an approval requirement at the individual series level set at the level of more than 50 percent of the outstanding debt securities of that series. For a discussion of the features of euro-CACs compared to those in English-law bonds see Linklaters (2012). Bradley and Gulati (2012) provide an empirical analysis of the impact of CACs on debtor countries' borrowing costs.

Argentine GDP warrant issued at the 2005 debt exchange, annual payments on the Greek warrant are subject to a one percent cap, in contrast to the Argentine warrant, which is uncapped. Additionally the Greek warrant is amortizing, i.e., starting in 2024 the payment amount would be reduced by five percent per year. In essence, the GDP warrant is a claw-back clause, which enables investors to benefit from higher-than-expected growth in the debtor country.

CONCLUSION

Initial fears that the Greek debt restructuring would pose a serious threat to the euro area's financial stability were not borne out. The PSI demonstrated that an orderly default involving a pre-emptive debt restructuring is possible in a monetary union, provided appropriate firewalls and crisis management institutions are in place. Greek banks retained access to liquidity through ELA and were subsequently compensated for the losses they suffered. The restructuring did not have any knock-on effects on foreign creditors, nor did it undermine financial stability in Greece. True, it gave rise to contagion through a rise in periphery credit spreads, but this reflected the absence of an effective firewall when the crisis erupted. Crisis management procedures and institutions had to be invented *in medias res,* since there had been no preparation for a sovereign default within the euro area.

Greece's imbalances were allowed to reach unprecedented proportions under circumstances that are unlikely to be repeated. First, there was monumental market failure as bondholders did not consider that there is credit risk in the euro area. Second, there was institutional failure as the Stability Pact failed to impose fiscal discipline. Third, there was regulatory failure, as all euro area bonds carried the same zero-risk weight irrespective of credit risk, which meant that banks investing in Greek bonds did not have to set aside capital and reserves. The corollary of the large imbalances that were allowed to develop was the historically unprecedented size of the bailout package that was required to achieve a soft landing.

Developments in the euro area's institutional and regulatory framework since the Greek debt exchange make it unlikely that Greece's experience will be repeated:

- The "Fiscal Compact," a permanent system of *ex ante* fiscal surveillance that took effect in January 2013, is far more likely to impose fiscal discipline than the original version of the Stability Pact. By requiring balanced-budget amendments in all euro area countries and pre-screening of annual budgets, it ensures that early warning signals would sound the alarm long before a country reaches an unsustainable deficit. The ESM will also monitor former program countries regularly through its Early Warning System to make sure that they can pay back their loans. The Fiscal Compact and broader economic governance reforms will facilitate more effective and coordinated policy implementation across the euro area.
- Crisis management institutions and procedures now in place (the ESM, EFSF and OMT) would make it possible to address any future sovereign episode earlier on, while limiting the scope for contagion. This would avoid debt restructurings that fail to restore sustainability and market access by being "too little, too late." Reforming euro-CACs to strengthen aggregation clauses would further facilitate comprehensive debt restructurings. Perhaps more importantly, the creation of an orderly workout mechanism, the ESM, will impose market discipline by making default possible.
- The ongoing process of banking union includes an agreement on "bail-in" provisions for failing banks in the EU, reached after the Cyprus program was agreed in May 2013. By contrast, the 2010 Irish bailout protected even junior creditors from any losses for fear of a sell-off in bank bonds across the euro area. Policy makers eventually realized that this approach threatened sovereign balance sheets and was politically unsustainable. EU-level agreement was reached in August 2013 on clear procedures for loss-sharing by shareholders, bondholders and, ultimately, depositors to deal with failing banks. These loss-sharing procedures would minimize taxpayer liabilities in any future sovereign debt restructurings by having bank investors and large depositors take the first hit.

As for the specific features of the Greek debt restructuring, their application should be considered on a case-by-case basis. Obviously, retrofitting CACs in domestic law bonds would only work in countries where these bonds constitute the bulk of the debt. The CACs retrofitted in the Greek-law bonds were aggregated across all bond series, maximizing investor participation but raising inter-creditor equity issues. Work is underway in several international fora in an effort to set a new market standard that strikes the right balance between debtor and creditor rights, with appropriate minority protection safeguards.

Debt restructuring would not be advisable in countries where domestic banks hold a large share of sovereign debt. The euro area crisis gave rise to a sharp reversal in cross-border capital flows and a return to home bias. The share of the sovereign debt of crisis countries held by foreign investors has declined sharply, reflecting capital repatriation (IMF 2013e). Until fragmentation recedes further and re-domestication of sovereign debt reverses, any further debt restructurings in the euro area should be mindful of the impact on domestic banks. Indeed, it has been suggested that the return to home bias is a rational response of investors to adverse shocks to sovereign solvency (Broner et al. 2013). Based on the premise that sovereigns care more about domestic than foreign creditors, the theory predicts that an adverse shock to solvency will be associated with a repatriation of debt to reduce the incentive to restructure the debt. If so, financial disintegration is likely to reverse as soon as the risk of debt restructurings dissipates.

What remains to be seen is how the legacy debts of the euro area periphery will be tackled. The handling of Greece's debt restructuring suggests at least an implicit attempt to limit the burden on EU private sector creditors by delaying PSI. An earlier restructuring might not have restored debt sustainability, but it would have lessened the build-up of official debt. Although it carries very low interest rates, official debt will one day need to be rolled over at market rates. By then, it is hoped, Greece's GDP would have grown sufficiently to make the debt sustainable, but this is far from certain. Ireland and Portugal, which also benefited from maturity extensions on official debt, remain heavily indebted post-crisis, with public debt ratios projected at 121 percent and 125 percent of GDP respectively in 2014. The lesson from the Latin American debt crisis of the 1980s is that the debt overhang weighs on investment and growth. The crisis was not resolved until creditors were forced to accept deep haircuts on their claims, in exchange for Brady bonds issued by the debtor countries in the late 1980s. The clean solution for the euro area periphery today would be a writedown of all sovereign debts, including official loans to Greece. For the time being, however, "pretend and extend" rules the day.

ACKNOWLEDGEMENTS

The author would like to thank the Greek government officials and market participants she interviewed for this paper, the EFSF, the IIF and four anonymous referees for helpful comments on an earlier draft.

WORKS CITED

Bank of Greece. 2012. *Report on the Recapitalization and Restructuring of the Greek Banking Sector.* December. www.bankofgreece.gr/BogEkdoseis/Report_on_the_recapitalisation_and_restructuring.pdf.

Buchheit, Lee C. and Mitu Gulati. 2010. "How to Restructure Greek Debt." SSNR Working Paper, May. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1603304.

Buchheit, Lee C., Mitu Gulati and Ignacio Tirado. 2013. "The Problem of Holdout Creditors in Eurozone Sovereign Debt Restructurings." January. http://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=5485&context=faculty_scholarship.

Bradley, Michael and Mitu Gulati. 2012. "Collective Action Clauses for the Eurozone: An Empirical Analysis." SSRN Working Paper, March. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1948534.

Broner, Fernando, Aitor Erce, Alberto Martin, and Jaume Ventura. 2013. " Sovereign Debt Markets in Turbulent Times: Creditor Discrimination and Crowding-Out." IMF Working Paper 13/270. December.

ECB. 2010a. "ECB Announces Change in Eligibility of Debt Instruments Issued or Guaranteed by the Greek Government." Press Release. May 3. www.ecb.int/press/pr/date/2010/html/pr100503.en.html.

———. 2010b. "Decision Establishing the Securities Market Program." May 14. www.ecb.europa.eu/ecb/legal/pdf/l_12420100520en00080009.pdf?e0e193dbae13419ec1d5208de7cc65b9.

———. 2012. "Technical Features of the Outright Monetary Transactions." September 6. www.ecb.europa.eu/press/pr/date/2012/html/pr120906_1.en.html.

Eser, Fabian and Bernd Schwaab. 2013. "Assessing Asset Purchases within the ECB's Securities Markets Program." ECB Working Paper Series S No 1587. September. www.ecb.europa.eu/pub/pdf/scpwps/ecbwp1587.pdf.

European Commission. 2012."The Second Economic Adjustment Program for Greece — First Review," Occasional Paper 123. December. http://ec.europa.eu/economy_finance/publications/occasional_paper/2012/pdf/ocp123_en.pdf.

European Council. 2011. "Euro Summit Statement." October 26. www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ec/125644.pdf.

———. 2012a. "Eurogroup statement." February 21. http://consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/128075.pdf.

———. 2012b. "Eurogroup Statement on Greece." November 27. www.consilium.europa.eu/uedocs/cms_data/docs/pressdata/en/ecofin/133857.pdf.

———. 2012c. "Towards a Genuine Economic and Monetary Union." June 26. http://ec.europa.eu/economy_finance/crisis/documents/131201_en.pdf.

———. 2012d. "ESM Treaty." www.european-council.europa.eu/media/582311/05-tesm2.en12.pdf.

Financial Times. 2011. "Banks to Meet to Sweeten Greek Terms." July 6. www.ft.com/intl/cms/s/0/8be3ef98-a6f2-11e0-a808-00144feabdc0.html#axzz2wF5HhUga.

———. 2013. "EU's Olli Rehn Lashes Out at IMF Criticism of Greek Bailout." June 7. www.ft.com/intl/cms/s/0/ed72d2ac-cf4e-11e2-be7b-00144feab7de.html?siteedition=uk#axzz32Ma37ghV.

Gitlin, Richard and Brett House. 2014. *A Blueprint for a Sovereign Debt Forum*. CIGI Paper No. 27. March. www.cigionline.org/publications/blueprint-sovereign-debt-forum.

González-Hermosillo, Brenda and Christian A. Johnson (2014). "Transmission of Financial Stress in Europe: The Pivotal Role of Italy and Spain, but not Greece." IMF Working Paper No 14/76. May. www.imf.org/external/pubs/cat/longres.aspx?sk=41522.0

Gulati, Mitu and Jeromin Zettelmeyer. 2012. "Making a Voluntary Greek Debt Exchange Work." CEPS Discussion Paper 8754, January. http://ideas.repec.org/p/cpr/ceprdp/8754.html.

IIF. 2012. "Report of the Joint Committee on Strengthening the Framework for Sovereign Debt Crisis Prevention and Resolution." October.

———. 2014. "IIF Special Committee on Financial Crisis Prevention and Resolution: Views on the Way Forward for Strengthening the Framework for Debt Restructuring." January.

IMF. 2010. "Greece: Request for Stand-By Arrangement." IMF Country Report No. 10/111. May. www.imf.org/external/pubs/ft/scr/2010/cr10111.pdf.

———. 2011. "Greece: Fourth Review Under the Stand-By Arrangement and Request for Modification and Waiver of Applicability of Performance Criteria." IMF Country Report No. 11/175. July. www.imf.org/external/pubs/cat/longres.aspx?sk=25038.0.

———. 2012. "Greece: Request for Extended Arrangement Under the Extended Fund Facility." IMF Country Report No. 12/57, March. www.imf.org/external/pubs/ft/scr/2012/cr1257.pdf.

———. 2013a. "Sovereign Debt Restructuring — Recent Developments and Implications for the Fund's Legal and Policy Framework." April 26. www.imf.org/external/np/pp/eng/2013/042613.pdf.

———. 2013b. "Jamaica: Request for an Extended Arrangement under the EFF." IMF Country Report No. 13/126, May. www.imf.org/external/pubs/cat/longres.aspx?sk=40549.0.

———. 2013c. "Greece: Ex Post Evaluation of Exceptional Access under the 2010 Stand-By Arrangement." IMF Country Report No. 13/156. June. www.imf.org/external/pubs/cat/longres.aspx?sk=40639.0.

———. 2013d. "Greece: First and Second Reviews Under the Extended Arrangement Under the Extended Fund Facility, Request for Waiver of Applicability, Modification of Performance Criteria, and Re-phasing of Access — Staff Report." IMF Country Report 13/20. January. www.imf.org/external/pubs/cat/longres.aspx?sk=40256.0.

———. 2013e. "Global Financial Stability Report: Old Risks, New Challenges." April. www.imf.org/external/pubs/ft/gfsr/2013/01/pdf/text.pdf.

———. 2014. *Fiscal Monitor: Public Expenditure Reform*. April.

ISDA. 2012. "ISDA EMEA Determinations Committee: Restructuring Credit Event Has Occurred with Respect to the Hellenic Republic." Press Release. March 9. www2.isda.org/newsroom/press-releases/page/11.

Krueger, Anne. 2002. "Sovereign Debt Restructuring and Dispute Resolution." Speech given at the Bretton Woods Committee Annual Meeting, Washington, DC, June 6. www.imf.org/external/np/speeches/2002/060602.htm.

Linklaters. 2012. "EU Publishes Mandatory Collective Action Clause for Use in Eurozone Sovereign Bonds from 1 January 2013." May. www.linklaters.com/pdfs/mkt/london/A14950441_0_11_120508_CAC_client_memo_MND.pdf.

Longwave Group. 2012. "Greek 'voluntary' PSI deal equivalent to 'obtaining a voluntary confession at the Spanish inquisition' - CEO of Commerzbank." March 9. www.longwavegroup.com/publications/related_articles/2012/120309_gw_kiron_sarkar_01.php.

Palaiologos, Yannis. 2014. "How Trichet Threatened to Cut Greece Off." *Kathimerini*. March 11. www.ekathimerini.com/4dcgi/_w_articles_wsite2_1_11/03/2014_538070.

Porzecanski, Arturo. 2013. "Behind the Greek Default and Restructuring of 2012." In *Sovereign Debt and Debt Restructuring: Legal, Financial and Regulatory Aspects*, edited by Eugenio A. Bruno. London: Globe Business Publishing.

Public Debt Management Agency. 2012a. Press Release. December 3. www.pdma.gr/attachments/article/248/Press%20Release%20-%20December%2003.pdf.

———. 2012b. "Hellenic Republic Announces Extension of Invitation Period in Relation to the Exchange Offer Transaction." Press Release. December 10. www.pdma.gr/attachments/article/255/Extension%20Press%20Release.pdf.

———. 2012c. "Hellenic Republic Announces Exchange Offer Transaction Results." Press Release. December 12. www.pdma.gr/attachments/article/261/Press%20Release%20-%20December%20-%202012.pdf.

Schadler, Susan. 2013. *Unsustainable Debt and the Political Economy of Lending: Constraining the IMF's Role in Sovereign Debt Crises*. CIGI Paper No. 19. November. www.cigionline.org/publications/2013/10/unsustainable-debt-and-political-economy-of-lending.

Spink, Christopher. 2012. "Greek Tragedy Averted." International Financing Review. December 23. www.ifre.com/greek-tragedy-averted/21059245.article.

Xafa, Miranda. 2013. "Life after Debt: The 2012 Greek Debt Exchange and Buyback." *World Economics* 14 (1). www.world-economics-journal.com/Contents/ArticleOverview.aspx?ID=547.

Zettelmeyer, Jeromin, Christoph Trebesch and Mitu Gulati. 2013. "The Greek Debt Restructuring: An Autopsy." Peterson Institute for International Economics, Working Paper 13. August 8. http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2144932.

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