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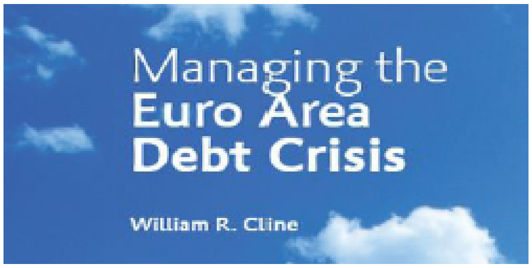
Debt Restructuring and Economic Prospects in Greece



Greece has been at the epicenter of the European debt crisis.[1] It is the only industrial nation since the 1930s (excluding early postwar Germany) that has been forced to restructure public debt with forgiveness. Financial contagion from Greece contributed to debt stress in the euro area periphery, at first in Ireland and Portugal but eventually even in the large and stronger economies of Italy and Spain. Following the temporary specter of a Greek exit from the euro, in mid-2012 the sharp escalation of potential European Central Bank (ECB) support through the promise of purchases of government bonds in Outright Monetary Transactions (OMT), if needed and in the presence of adjustment programs, marked the turning point toward more normal sovereign borrowing conditions in the euro area periphery. By early 2014, Ireland had successfully exited from its adjustment program, and Portugal was near completion of its program as well. The jury is still out, however, on whether the debt restructuring already carried out for Greece will prove to be sufficient.

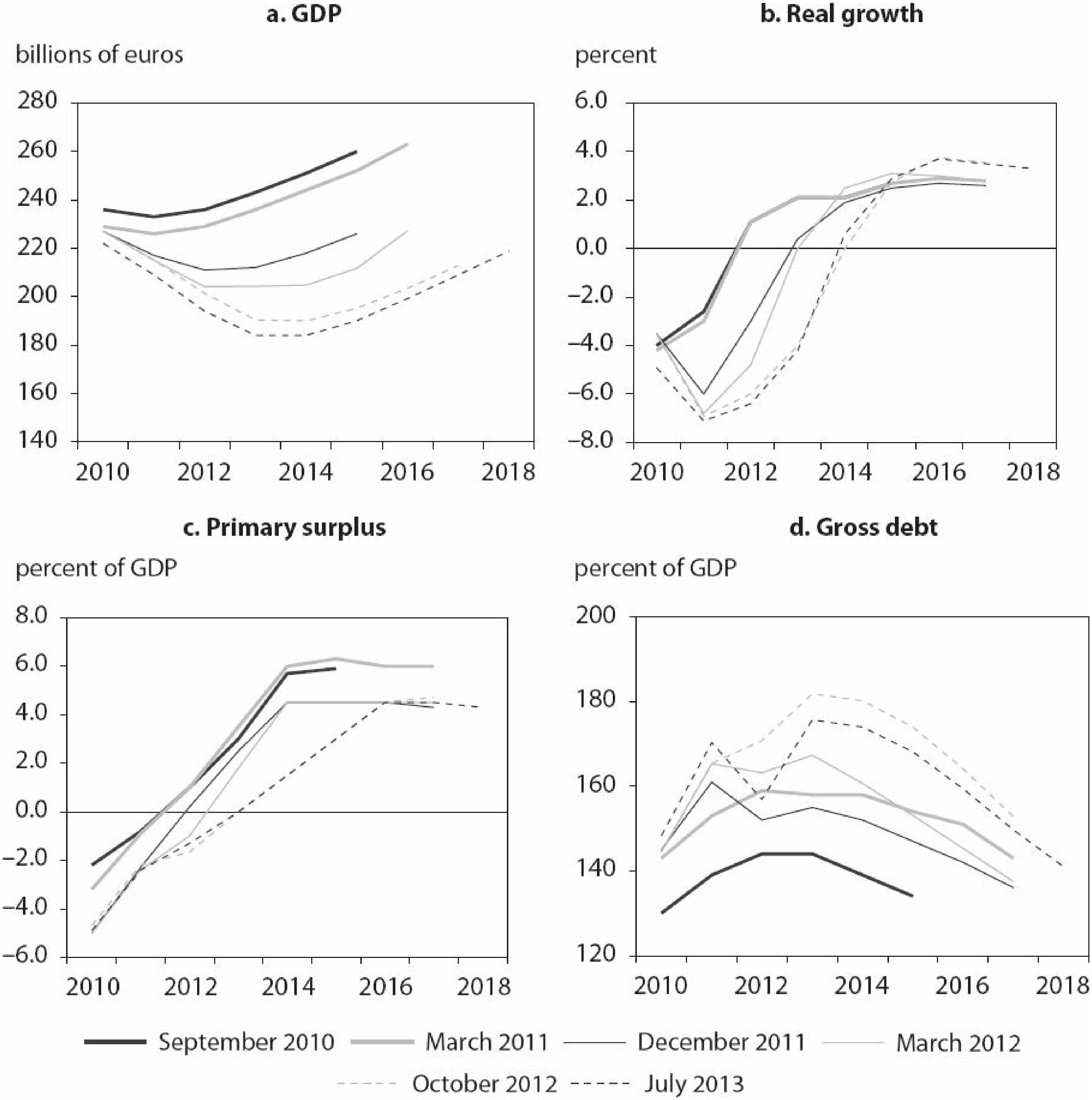
In April 2012 a successful exchange of Greek public debt conveyed 53.5 percent debt reduction for privately held debt.[2] However, much of the debt was excluded because it was held by the ECB, euro area official sector, and International Monetary Fund (IMF). Losses on the holdings by Greek banks necessitated recapitalization that offset a significant part of the debt reduction. In December 2012 an additional package of official sector relief (in the form of lower interest rates and support for a buyback of about half of the restructured privately held debt) helped consolidate the conditions for managing the remaining debt over the next few years if reasonable growth and fiscal expectations are achieved.

Over the longer term, however, it is unclear that Greece will be able to reenter private capital markets in substantial volume for long-term bonds by 2020 even if its debt level is down to the range of about 120 percent of GDP. The damage to its credit reputation from restructuring with a large haircut seems likely to leave it in a more difficult borrowing position than other euro area sovereigns even if it achieves comparable debt levels. Nonetheless, the interest burden would be lower than usually associated with this range of debt because of dominant official sourcing, and in April 2014 the government successfully issued a modest amount of medium-term debt. On balance, further relief on official sector claims may or may not be needed in the future. Such relief is not urgent at present, however, because almost all of Greece's borrowing needs should already be covered for the next several years. Eventual official debt forgiveness would appropriately be linked to demonstrated performance on fiscal consolidation.

Initial Programs and Deteriorating Prospects

In May 2010, Greece entered into an economic adjustment program with €110 billion in official support from the IMF (€30 billion) and European governments (€80 billion in the Greek Loan Facility [GLF]). In comparison, Greek public debt at the end of 2009 stood at €298 billion, or 127 percent of GDP (IMF 2011a, 37). The official program was premised on a return to government borrowing from private markets in 2012, in amounts reaching about €70 billion annually in 2014 (IMF 2011a, 49). The hope that Greece's debt problem could be resolved through official lending to tide it over during a liquidity problem turned out to be overly optimistic, however. By December 2012, efforts to resolve the problem had escalated to involve relatively deep debt forgiveness by private holders, a new round of large additional official support through the European Financial Stability Facility (EFSF), a major buyback, and initial variants of official sector debt relief in the form of lower interest rates on GLF debt and the option to capitalize interest on EFSF debt for 10 years. From the vantage point of early 2014, despite a modest April issuance of five-year bonds, there is little prospect of returning any time soon to much broader market access at longer terms and moderate spreads and considerable possibility that further official relief may lie ahead. The slide from the policy framework of solvency and refinancing to insolvency and forgiveness reflected in considerable part a progressive deterioration in prospects for growth and fiscal adjustment. Nominal GDP had initially been expected to rise by 13 percent from 2009 to 2015 (IMF 2010c); instead, by July 2013 the expectation was that it would fall by 18 percent over this period (IMF 2013k). Figure 7.1 shows successive IMF program review projections for Greece.[3] In panel A, for example, the March 2012 report placed nominal GDP in 2015 at a level 16 percent lower than that projected in March 2011. Panel B shows the corresponding successive downgradings of projected economic growth. For 2012, for example, the first two IMF program reviews anticipated GDP growth of +1 percent; in December 2011 the outlook was for 2012 growth of −3 percent, and by October 2012 the outlook had fallen to −6 percent.

Figure 7.1 Successive IMF projections for Greece, September 2010 through July 2013



IMF = International Monetary Fund

Sources: IMF (2010c, 2011a, 2011e, 2012c, 2012i, 2013k).

Similarly, panel C shows the successive downgradings in expectations for the primary surplus as a percent of GDP. At the outset the program had aspired to a medium-term surplus of 6 percent of GDP; by December 2011 this target had been cut to 4.5 percent; and by October 2012 the date of achieving this lower target had been delayed by two years. Despite shortfalls from initial fiscal goals, Greece carried out large fiscal adjustment in terms of reducing primary spending by 24 percent in real terms from 2009 to 2012. In its July 2013 program review, the IMF emphasized the progress on fiscal adjustment, stating: “steadfast fiscal adjustment by the Greek authorities since 2009 delivered an improvement in the cyclically-adjusted primary balance of over 15 percent of GDP” (IMF 2013k, 4).

Finally, panel D displays the successive IMF projections of the ratio of debt to GDP. The September 2010 projection was far more optimistic than the October 2012 projection, even though there had been substantial debt relief between the two reviews. The combination of lower primary surplus performance and much lower nominal GDP more than offset the debt relief. (The modest reduction in the projected debt ratio for 2012 from the March 2011 report to the December 2011 report reflects the limited impact of the restructuring of privately held debt, discussed below.)

As noted, despite the slippage on the primary balance, Greece carried out large fiscal adjustment in terms of reducing primary spending. Following a decline of 24 percent in real terms from 2009 to 2012, real primary spending is scheduled to fall an additional 7 percent from 2012 to 2017 (IMF 2013k, 51). A sharp decline in revenue associated with recession meant that the progress in reducing the fiscal deficit was moderated. Even so, the primary deficit fell from a peak of 10.4 percent of GDP in 2009 to 1.3 percent of GDP in 2012 and swung to a small surplus in 2013. The improvement by 9.1 percent of GDP through 2012 was three-fifths of the way toward the goal of a total adjustment of 15 percent of GDP from 2009 to 2017. As noted, in cyclically adjusted terms, the primary balance had already improved by 15 percent of GDP from 2009 to 2012.

From Stretchout to Debt Reduction

In October 2011, I prepared projections (Cline 2011) that indicated that Greece should be able to sustain its debt on the terms that had been arranged in the July 2011 package of official support combined with private sector involvement (PSI), even though the PSI amounted to a stretchout of maturities with minimal debt forgiveness. Even so, achievement of ambitious fiscal targets (a 6 percent of GDP primary surplus by 2014) and reasonable growth performance were crucial to that possibility. In addition to the earlier €110 billion program of support from the IMF and euro area, the euro area pledged further support of €109 billion. For its part, PSI was supposed to provide refinancing of €135 billion over 2011–20.[4] I emphasized four features that made Greek debt more sustainable than might be inferred from the ratio of gross debt to GDP: large privatizations were planned, providing funds to retire debt; Greece held relatively large public financial assets, making net debt considerably lower than gross debt; there would be a misleading surge in gross debt offset by a corresponding rise in assets as a consequence of the collateralization needed for the PSI; and a large share of the debt was from official sources at relatively low interest rates (Cline 2011, 2).[5]

My baseline projection called for gross debt to peak at 175 percent of GDP in 2012 and fall to 113 percent by 2020; net debt would fall from 121 percent of GDP in 2011 to 69 percent by 2020. Noting that the net debt ratio by 2020 would be about the same as the level for US federal debt held by the public in 2011, I concluded that with the July 2011 support package in hand, Greek public debt should be sustainable.[6] However, the arrangement was not given an opportunity to materialize. German authorities in particular pressed for much deeper debt forgiveness by private sector holders.[7] Yet the scope for gains from private holder forgiveness was limited because by then only about half of the debt was held by the private sector (in part because about €50 billion in government bonds had been purchased from the market by the ECB in its Securities Markets Programme [SMP]). By late October 2011 euro area authorities reached agreement with representatives of banks and insurers that they would accept a 50 percent reduction in the face value of debt.

As discussed in chapter 5, in June 2013 the IMF issued a report concluding that there should have been earlier, preemptive debt haircuts in Greece (IMF 2013h). However, as suggested by the mid-2011 projections in Cline (2011), there was a plausible case at that time that Greece could avoid debt forgiveness if it marshaled the political will to take the needed fiscal adjustment. The 53 percent haircut eventually forced on private creditors will leave a legacy of tainted credit reputation that will haunt Greek access to capital markets for a long time, and it made sense in 2010–11 to seek to avoid a shock of this nature if possible.

Restructuring Private Claims

In April 2012, Greece successfully exchanged approximately €200 billion in debt held by the private sector for 10- to 30-year exchange bonds with a face value of 31.5 percent of the original bonds and paying 2 to 4.3 percent interest, plus an up-front payment of 15 percent of original face value over two years (Zettelmeyer, Trebesch, and Gulati 2012, 6). The direct reduction in gross debt was €107 billion (€200 billion less €137 billion forgiven, but plus the €30 billion up-front "sweetener"), representing a 53.5 percent cut in the nominal value of Greek debt held by private investors and exchanged (and 51.9 percent of total eligible privately held debt).[8]

However, the €200 billion exchanged accounted for only 56.2 percent of the end-2011 debt total. Almost all of the rest was exempt, including importantly about €21 billion held by the IMF, €53 billion held by euro area governments in the GLF, and €57 billion held by the ECB from its SMP purchases as well as by national central banks (table 7A.1). In addition, losses by Greek banks on their holdings as a result of the debt exchange required recapitalization of €22 billion, necessitating this amount in new public borrowing (IMF 2013c, 6). The net debt reduction was thus €85 billion, or 23.9 percent of total public debt at the end of 2011.[9] The overall effect of the large PSI of April 2012 was thus to reduce total Greek debt by slightly less than one-fourth. It is perhaps not surprising that once the country had plunged into insolvency mode, a debt reduction by only one-fourth would not have been sufficient to reestablish solvency decisively.

Political Turmoil, "Grexit" Risk, and Outlook by Late 2012

In the second quarter of 2012 political uncertainty escalated. The main parties (New Democracy and Pasok) fared badly in May elections, and the absence of a coalition required a second election in June. A key opposition coalition (Syriza) condemned the economic adjustment program, and market expectations of a possible Greek exit from the euro ("Grexit") escalated.[10] After New Democracy won in the follow-up June elections, and affirmed Greece's commitment to the adjustment program, fears about an exit from the euro eased but delays in euro area and IMF financing persisted in view of shortfalls in fiscal performance.

Prospects for economic performance appeared much grimmer by late 2012 than a year earlier. Thus, whereas my October 2011 study had anticipated GDP growth of −3.8 percent in 2011, +0.6 percent in 2012, and +2.1 percent in 2013, the new baseline for growth by October 2012 showed −6.9 percent for 2011, −6 percent for 2012, and −4 percent for 2013 (IMF 2012i). The growth deterioration alone meant that the projected debt-to-GDP ratio would now be almost 20 percent higher than before. The delay of achievement of the 4.5 percent of GDP primary surplus for two years meant still further escalation in the debt ratio.

To make matters worse, the IMF apparently no longer considered the sizable public financial assets to be worth anything. Whereas the *World Economic Outlook* (WEO) in October 2010 had estimated end-2010 public financial assets at €49 billion, or 22 percent of GDP, a year later it placed the value of these assets at zero and by the October 2012 issue the assets were still at zero (IMF 2010d, 2011c, 2012i).[11]

In October 2012, the IMF's WEO projected that for Greece the ratio of gross public debt to GDP would rise from 165 percent of GDP at the end of 2011 to 171 percent at the end of 2012, peak at 182 percent in 2013, and then decline to 153 percent by 2017 (IMF 2012h). The corresponding absolute level for projected debt was €344 billion, down only €12 billion from the level at the end of 2011. In principle it was surprising that the debt ratio was scheduled to rise in 2012, considering that in 2012 there was a restructuring with a nominal haircut of 53.5 percent for private holders. Similarly, it was surprising that the absolute debt reduction was expected to amount to only €12 billion after a net cut of €85 billion (discussed above) and with the 2012 fiscal deficit then projected at only €9.5 billion. One reason for the paradox of a rising debt ratio was that GDP was falling, by a nominal decline of 7 percent. But it also appears that the IMF's October 2012 WEO overstated the baseline end-2012 debt ratio by about 10 percent of GDP.[12] An official sector outlook for a rising debt ratio even after the deep PSI cut undoubtedly contributed to a policy environment favoring further debt reduction, this time by the euro area public sector.

December 2012 Official Relief Package

By the third quarter of 2012, the IMF was increasingly pressing for a sufficient easing of the terms of euro area official support to bring the 2020 debt ratio down to a sustainable level of 120 percent of GDP or less.[13] In late November 2012, euro area finance ministers and the IMF agreed on what amounted to a new round of debt relief, this time for official sector creditors. The package involved four elements of relief: lower interest rates on GLF loans; support for a buyback of debt; scope for deferring and capitalizing interest due on EFSF lending; and passing on of ECB profits on Greek debt purchased in the market to Greece.[14]

Interest rates on the bilateral (GLF) loans were to be cut by 100 basis points, to 50 basis points above interbank rates. Interest payments on the second round of euro area support (through the EFSF) were eligible to be "deferred" (i.e., capitalized) over the next decade, although such capitalized interest in turn would be subject to interest payments. Some €10 billion in support would be used to buy back some €30 billion in government debt at about 33 cents on the euro of face value. Some €9 billion in prospective profits from ECB receipts on Greek government bonds acquired at a discount in the SMP that would have devolved to member country central banks would instead be passed along to Greece.[15] Altogether some €40 billion would be cut from the debt, placing the debt-to-GDP ratio at no more than 124 percent by 2020 and 110 percent by 2022. In December 2012, the Greek government successfully repurchased debt with a face value of €31.9 billion for €11.29 billion (Ministry of Finance 2012b).[16]

Prospects for 2014–20

In mid-January 2013, the IMF issued its long-delayed review under the Extended Arrangement that had been agreed in March 2012, with its new assessment incorporating the effects of the December 2012 official relief package (IMF 2013c). By June 2013, the Fund's updated program review broadly left unchanged the baseline macroeconomic assumptions of the January review. The assumptions of the June review (IMF 2013k, 57, 60, 65, 68) are used as the baseline for the European debt simulation model (EDSM) simulations of this chapter (scenario "2" of table 7.1).[17] For growth, the IMF's baseline envisions a return to significant growth averaging 3.2 percent annually in 2015–20. In the alternative scenarios, the favorable case adds 0.5 percent per year to the baseline.[18] The unfavorable scenario uniformly reduces the growth rate by 1 percentage point below the baseline for 2014 and after. For the primary surplus, the IMF baseline calls for an already relatively ambitious plateau of almost 4.5 percent of GDP on average in 2016–20. In the alternative scenarios, the favorable case adds 1 percent of GDP to the baseline targets. The unfavorable case subtracts 1 percent in 2014–15 and limits the primary surplus to 3 percent of GDP in 2016–20 (about 1.5 percent below the baseline). For bank recapitalization and other discovered debt, the largest amount was already included in the 2012 outcome (€41 billion). The IMF projections called for an additional €7.2 billion in 2013, used as the estimated actual outcome in table 7.1.

Appendix table 7A.1 sets forth details of the resulting baseline projection of the EDSM. For the ratio of gross debt to GDP, figure 7.2 shows the baseline as well as the favorable 25th percentile in the distribution, unfavorable 75th percentile, and probability-weighted average path. The baseline debt ratio rises from 157 percent of GDP in 2012 to 175 percent in 2013 and then declines steadily to 127 percent by 2020. The distribution of the outcomes across the scenarios is relatively narrow, with the 2020 debt-to-GDP ratio at 122 percent in the favorable 25th percentile and at 135 percent in the unfavorable 75th percentile.

It is important to recognize that by now the predominantly official sector sourcing of Greek public debt means that interest rates are moderate, aiding debt sustainability. Table

7A.1 reports interest payments by creditor.[19] Not only are the GLF rates modest (for example, at about 1 percent in 2013–15 and 2 percent by 2016) but interest rates on the EFSF debt are also moderate, at about 1.5 percent for 2013–14 and 3 percent by 2016 and after.[20] Interest payments to the IMF are also moderate, at an effective rate of 3.7 percent in 2014 for example.

Table 7.1 Scenario assumptions for Greece

Scenario	2013	2014	2015	2016	2017	2018	2019	2020
	Real GDP growth (percent)							
1	—	–0.4	1.9	2.7	2.5	2.3	2.0	1.6
2	–3.7	0.6	2.9	3.7	3.5	3.3	3.0	2.6
3	—	1.1	3.4	4.2	4.0	3.8	3.5	3.1
	Primary surplus (percent of GDP)							
1	—	0.5	2.0	3.0	3.0	3.0	3.0	3.0
2	0.8	1.5	3.0	4.5	4.5	4.3	4.3	4.2
3	—	2.5	4.0	5.5	5.5	5.3	5.3	5.2
	Bank recapitalization and contingent debt recognition (billions of euros)							
1	—	0	0	0	0	0	0	0
2	7.2	0	0	0	0	0	0	0
3	—	0	0	0	0	0	0	0
	Privatization (billions of euros)							
1	—	2.5	1.0	1.2	1.3	2.2	2.6	2.6
2	1.6	3.5	2.0	2.2	2.3	3.2	3.6	3.6
3	—	4.5	3.0	3.2	3.3	4.2	4.6	4.6

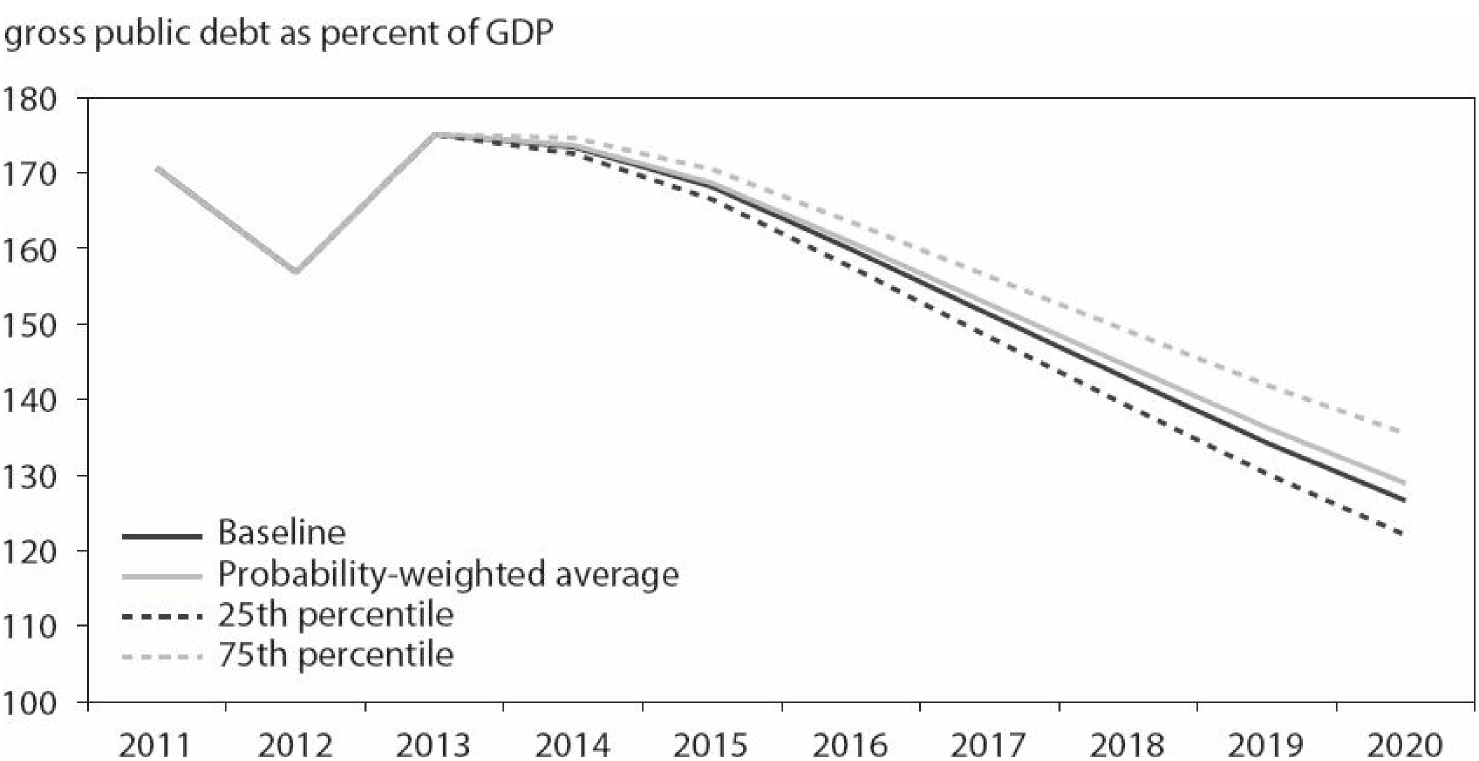
Scenarios: 1 = unfavorable; 2 = baseline; 3 = favorable

Sources: IMF (2013k); author's calculations.

Overview

Whereas Ireland exited from its official support program in December 2013, and Portugal will complete its program in May 2014 either with a "clean exit" or some form of follow-up precautionary program, Greece's official support program lasts through March of 2016.[21] Total official disbursements under the two support programs were scheduled to reach approximately €240 billion, of which all but about €20 billion had been disbursed by early 2014.[22] The large official support has effectively taken Greece out of the need for private market access for most of the next decade.[23]

Figure 7.2 Debt projections for Greece



Source: Author's calculations.

In view of the IMF projections and those here, more relief may be needed in the future for Greece to regain full market access by 2020 and after. For a country that has gone through debt restructuring with deep forgiveness forced on private creditors, it is difficult to believe that the euro area benchmark of 120 percent of GDP debt ratio that has become the target for creditworthiness would be sufficiently low to induce investors to reenter the long-term debt market in volume and at moderate spreads. Essentially the markets are likely to impose a higher sovereign risk premium on a country that has defaulted than on others that have consistently honored their debt.

At the same time, it is important to recognize that the debt ratio somewhat overstates the debt burden because of low interest rates on debt held by the euro area official sector. However, the GLF component with its particularly low rates constitutes only a minority of the debt outstanding. In the projections set forth in appendix 7A, the ratio of interest payments to GDP is still as high as 4.3 percent by 2020. In comparison, net interest payments in 2020 in the base cases of EDSM projections stand at 4.4 percent of GDP in 2020 for Ireland, 4.6 percent for Portugal, 5.3 percent for Spain, and 5.2 percent for Italy (chapter 6). So even taking account of some interest rate concessionality, Greece would be on a broadly equal footing with other sovereigns in the area with respect to debt burden but not on an equal footing with regard to credit history. The most optimistic interpretation would then be that markets would be sophisticated enough to look through the debt ratio to the interest burden as the meaningful measure of debt sustainability, but even so would charge some extra risk spread not because Greek public debt was "high" but because the sovereign credit reputation had been tarnished. With the passage of several years of successful achievement of fiscal targets, the size of this reputational risk premium might be manageable.[24]

The principal argument for a more optimistic view of prospective market access is that Greece already managed to issue €3 billion in new five-year debt on private markets in April 2014, at a yield of 4.95 percent.[25] However, this successful issue may not represent a sign of strong reentry to the capital market. It seems likely that investors were taking the bet that unrestructured private debt is far too small to provide much relief to the sovereign through a new round of haircuts. In effect, the small amounts of new private holdings may be seen as having de facto seniority, a status that would disappear if the government were to attempt to borrow large amounts of long-term debt.

Prior to the April issuance, the IMF had emphasized that additional relief may be needed. It noted that if the debt ratio is to be brought down to 110 percent of GDP by 2022, as agreed in principle in the December 2012 package, doing so "in all likelihood will necessitate either large reductions in EFSF interest rates or principal haircuts on the GLF" (IMF 2013c, 84).[26]

The present study reinforces the IMF diagnosis that further official debt relief may be needed.[27] The probability distribution of outcomes across the scenarios places even the favorable 25th percentile ratio of gross debt to GDP at 119 percent in 2020. The baseline projection here tracks almost identically with that of the IMF once allowance is made for the Fund's assumption of 4 percent of GDP further relief by 2020. The bulk of any future relief would seem likely to have to come from official creditors, both because they will account for 80 percent of the total stock of debt outstanding in 2020 (excluding that held by Greek public subsectors), and because the private holders have already experienced deep reductions in the restructuring.[28]

In view of likely political resistance in Germany and other partner countries to outright reduction of debt principal, it is useful to gauge the maximum extent of relief that might be achieved in what has come to be called "OSI" (official sector involvement, the parallel of private sector restructuring). If the euro area official sector were to eliminate all interest payments on debt owed by Greece (but excluding the ECB's holdings), the cumulative effect would be to reduce the debt-to-GDP ratio by 2020 by 15 percentage points, bringing it down to 112 percent. Conceivably that reduction could suffice to reestablish market access, especially if a strong track record of achieving fiscal targets has been built by then. It would be important, however, for policymakers to exclude the already restructured private debt from yet another haircut in the event of such OSI. Restructured private claims amount to only about 10 percent of public debt (table 7A.1), and a second round of haircuts would provide minimal relief while causing a shock to sovereign risk spreads for future borrowing.

For the next several years, nonetheless, Greek public debt should now be relatively manageable even without additional OSI, thanks to the private restructuring and easing in official sector terms. As shown in table 7A.1, official sources should almost fully cover borrowing needs through 2020, albeit with the help of capitalizing interest in amounts that cumulate to €26 billion by 2020, or 11 percent of GDP in that year. With debt dynamics manageable over this period, Greece should be able to avoid an exit from the euro and/or a severe new round of falling output. Successful adherence to the baseline of the revised adjustment program would go a long way to removing the Greek crisis from its earlier pivotal role in contributing to a broader debt crisis in the euro area.

Appendix 7A

Table 7A.1 EDSM baseline projections through 2020 for Greece

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Percent of GDP:											
Debt	147.9	170.6	156.8	175.1	173.4	168.1	159.9	151.3	142.7	134.3	126.6
Net debt	147.9	170.6	156.8	175.1	173.4	168.1	159.9	151.3	142.7	134.3	126.6
Net interest		7.3	3.4	4.6	5.3	5.4	5.6	5.1	4.8	4.6	4.3
Amortization		17.9	12.6	15.8	20.6	16.0	10.4	10.2	8.9	11.0	9.1
Billions of euros:											
Nominal GDP	222.2	208.5	193.8	184.6	184.9	191.1	200.3	210.0	220.0	230.4	240.5
Primary deficit	10.7	4.8	2.5	–1.5	–2.8	–5.7	–9.0	–9.5	–9.5	–9.9	–10.1
Total deficit	10.7	20.0	9.5	7.0	6.9	4.5	2.2	1.3	1.2	0.7	0.3
(–) privatization receipts		–1.0	0.0	–1.6	–3.5	–2.0	–2.2	–2.3	–3.2	–3.6	–3.6
(–) ECB profit return			0.0	–2.7	–2.5	–2.0	–1.7	–0.1	–0.1	–0.1	–0.1
(+) bank recapitalization	8.4	–3.0	41.0	7.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(+) other debt discovery			2.4	7.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
(+) buybacks			11.3								
(+) PSI-related operations			34.5								
(+) deposits			–1.0	3.0	–3.7	3.3	–1.8	0.0	0.0	0.0	0.0
(+) other			0.0	1.9	1.4	–1.7	4.2	0.0	0.0	0.0	0.0
Net borrowing requirement			97.7	22.3	–1.4	2.1	0.7	–1.1	–2.1	–3.0	–3.4
Subsectors debt change			10.6	–3.0	–1.1	–1.6	–1.6	–1.6	–1.6	–1.6	–1.6
Amortization		37.3	24.5	29.1	38.1	30.6	20.9	21.5	19.6	25.5	21.9
IMF		0.0	0.0	1.7	7.4	8.6	3.1	0.9	2.1	3.4	4.5
ECB		0.0	11.9	8.2	10.5	6.8	2.0	4.9	1.7	6.4	1.5
ST		9.2	11.8	18.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0
MLT (pre-2013)		28.1	0.8	0.8	5.2	0.0	0.0	0.0	0.0	0.0	0.0
Exchange bonds		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
MLT (new)				0.0	0.0	0.2	0.9	0.8	0.8	0.7	0.9
Gross borrowing requirement		53.3	122.2	51.4	36.7	32.7	21.6	20.4	17.5	22.5	18.5

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Billions of euros:											
Total financing	40.6	53.7	128.3	51.5	34.3	29.0	17.1	15.8	15.0	17.6	15.0
IMF	10.3	9.9	1.6	8.6	8.9	7.1	1.8	0.0	0.0	0.0	0.0
EA: GLF	21.1	32.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
EA: additional	0.0	0.0	108.3	27.9	8.6	0.0	0.0	0.0	0.0	0.0	0.0
EA: interest capitalization				–0.1	2.4	3.7	4.5	4.7	2.5	4.9	3.5
Private ST	9.2	11.8	18.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
Private MLT				0.0	1.8	6.9	0.3	0.8	0.0	2.6	0.0
Debt	328.6	355.7	303.9	323.2	320.7	321.3	320.4	317.7	314.0	309.4	304.4
IMF	10.3	20.7	22.3	29.2	30.7	29.2	27.9	27.1	24.9	21.6	17.1
EA: GLF	21.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1	53.1
EA: additional	0.0	0.0	108.3	136.2	144.8	144.8	144.8	144.8	144.8	144.8	144.8
EA: interest capitalization				–0.1	2.4	6.0	10.5	15.2	17.7	22.6	26.0
ECB	20.0	56.5	44.6	36.4	25.9	19.1	17.1	12.3	10.6	4.2	2.7
ST	9.2	11.8	18.4	15.0	15.0	15.0	15.0	15.0	15.0	15.0	15.0
MLT (pre-2013)	268.0	213.6	32.3	31.5	26.3	26.3	26.3	26.3	26.3	26.3	26.3
Exchange bonds			29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9	29.9
MLT (new)			0.0	0.0	1.8	8.6	8.0	7.9	7.2	9.0	8.1
Intragovernment holdings			–5.0	–8.0	–9.1	–10.7	–12.3	–13.9	–15.5	–17.1	–18.7
Interest payments			6.6	8.5	9.7	10.2	11.2	10.8	10.6	10.6	10.4
IMF			0.6	0.9	1.2	1.1	1.1	1.0	1.0	0.8	0.7
EA: GLF			0.8	0.4	0.5	0.7	1.0	1.1	1.1	1.1	1.1
EA: additional			0.0	1.3	2.4	3.6	4.3	4.3	4.3	4.3	4.3
EA: interest capitalization					0.0	0.1	0.2	0.3	0.5	0.5	0.7
ECB			2.8	2.2	1.8	1.3	1.0	0.9	0.6	0.5	0.2
ST			0.6	0.9	0.8	0.8	0.8	0.7	0.8	0.9	0.9
MLT (pre-2013)			8.1	1.2	1.2	1.0	1.0	1.0	1.0	1.0	1.0
Exchange bonds				0.6	0.6	0.6	0.9	0.9	0.9	0.9	0.9
MLT (new)				0.0	0.0	0.1	0.6	0.6	0.6	0.5	0.6
Accrual adjustment				0.9	1.3	1.0	0.4				
Financial assets		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

EA = euro area official sector; ECB = European Central Bank; EDSM = European debt simulation model; GLF = Greek Loan Facility; IMF = International Monetary Fund; MLT = medium and long term; PSI = private sector involvement; ST = short term

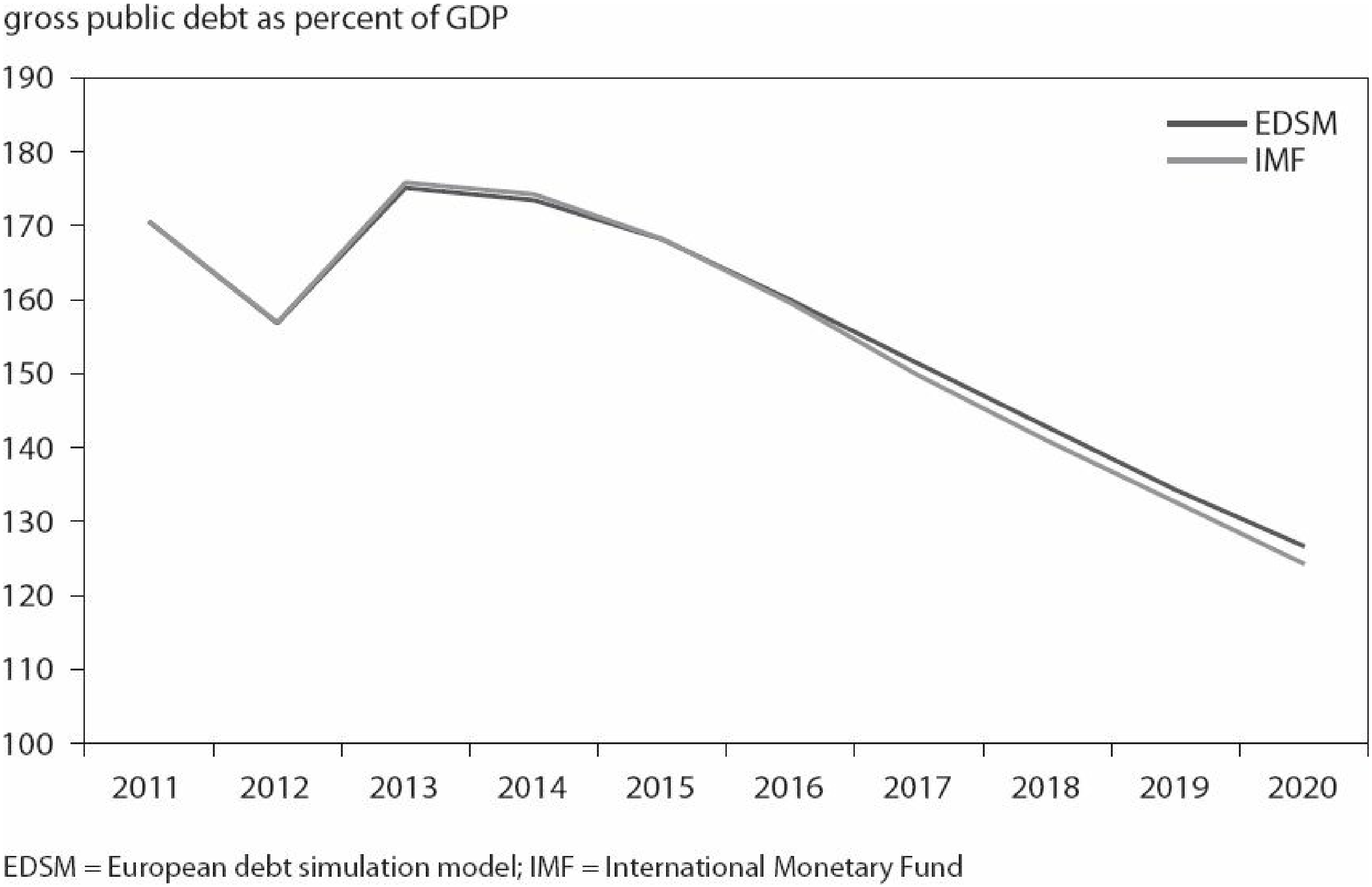
Sources: IMF (2013k); Ministry of Finance (2012a); author's calculations.

Appendix 7B
Comparison to IMF Projections and Impact of the December 2012 Relief Package

Figure 7B.1 shows the EDSM baseline and the corresponding IMF (2013k) baseline projections for the ratio of gross debt to GDP. The two projections are extremely close, as should be expected in view of identical assumptions for the key macro inputs (growth, primary surplus, privatization, and bank recapitalization). By 2020 the EDSM debt ratio stands at 127 percent of GDP versus 124 percent in the IMF projection. The divergence by 2020 can be fully explained, however, by the fact that the IMF assumes further official relief of some type. The January 2013 IMF review stated that "measures delivering roughly 4.1 percent of GDP by 2020 will be needed to bring debt to 124 percent of GDP by 2020" (IMF 2013c, 84). By implication, in the absence of such measures the IMF baseline would also place gross debt at around 128 percent of GDP in 2020.

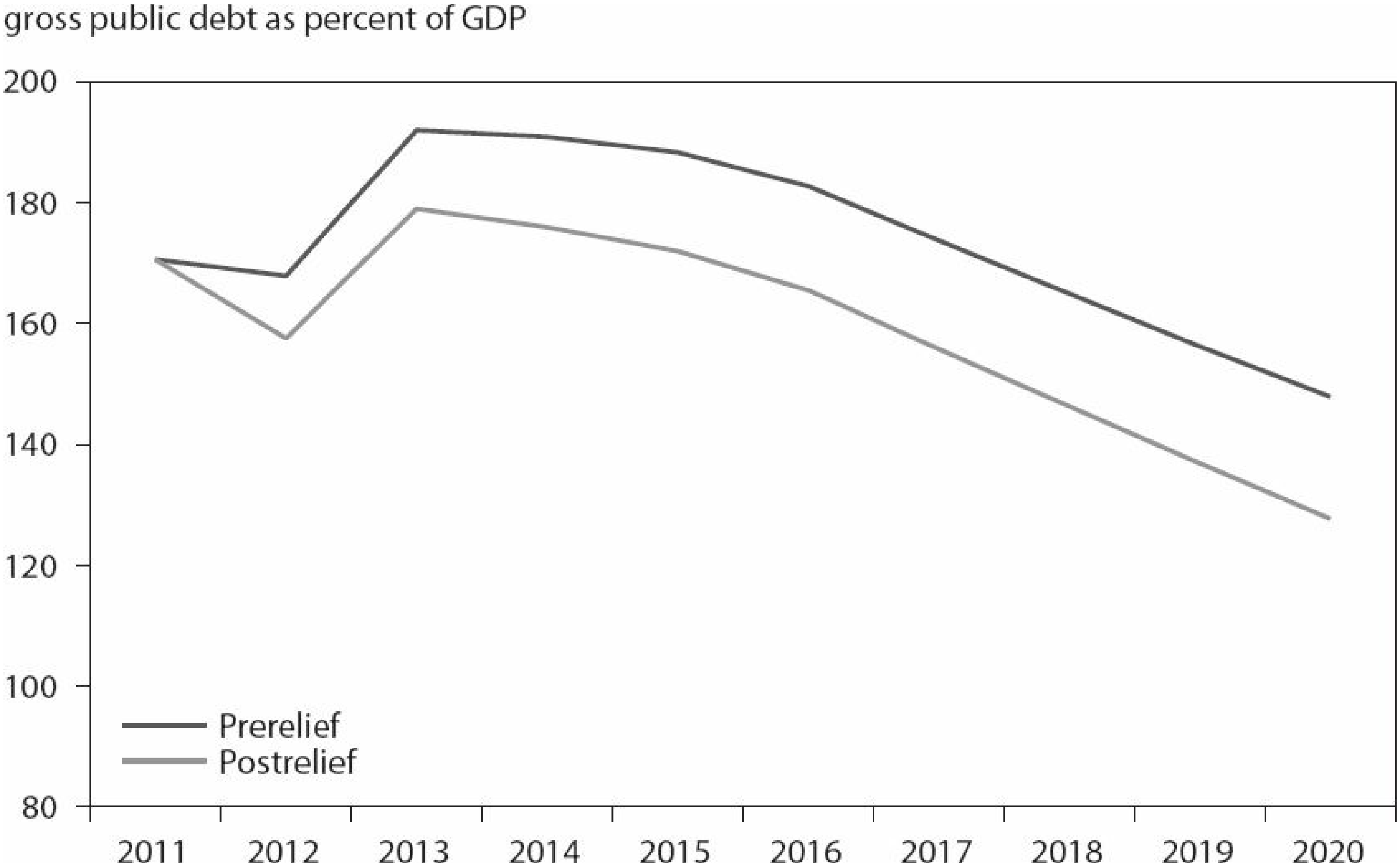
Figure 7B.2 shows the impact of the December 2012 package of official relief. The revised baseline for the ratio of gross debt to GDP was lower than the prerelief baseline by about 10 percentage points of GDP in 2012, reflecting the debt buyback. The difference widens to 20 percentage points by 2020, reflecting the cumulative effect of lower GLF interest rates and the effect of the return of ECB profits from the SMP.[29] Taking the average of 15 percent and applying it to the level of GDP in the middle of this period, the implicit debt reduction from the official support package was about €30 billion, or 35 percent of the size of the €85 billion net debt savings from the April private sector involvement.

Figure 7B.1 Baseline debt projections: IMF and EDSM



Source: IMF (2013k); author's calculations.

Figure 7B.2 Baseline projections for Greek public debt before and after December 2012 package of official relief and buyback



Source: Author's calculations.

1. An earlier version of this chapter appeared in Cline (2013a).

2. Jeromin Zettelmeyer, Christoph Trebesch, and Mitu Gulati (2012) calculate the corresponding present-value reduction of the private sector involvement (PSI) exchange at 60 percent from the standpoint of Greece and 65 percent from the standpoint of creditors (central estimates).

3. The late-2012 set of projections, however, is from the IMF's October 2012 *World Economic Outlook* (IMF 2012i), because of the unusually long hiatus with no program review publication between March (IMF 2012c) and January (IMF 2013c).

4. The mid-2011 PSI converted claims to 30-year par bonds at moderate interest rates (about 4.5 percent) or "discount" bonds forgiving 20 percent of face value but bearing somewhat higher interest rates (about 6.5 percent) (Cline 2012a, 201). The main effect of the PSI agreement was to provide long-term rollover of maturities otherwise coming due, without conveying much real relief gauged against the original terms of the debt.

5. Specifically, at end-2010 Greece held a reported €101 billion in financial assets, placing its net debt at 110 percent of GDP, far lower than the gross debt ratio of 143 percent (Cline 2011). Regarding collateral, the July 2011 PSI deal would have involved setting aside AAA zero-coupon bonds to collateralize the (far less concessionary) bond exchange then envisioned. The funds for this collateral, on the order of €30 billion to €40 billion, would reasonably have been seen as an asset, given the expectation that the exchanged bonds would be fully serviced and the collateral not called (Cline 2011, IIF 2011).

6. A prominent Greek economist who would soon become prime minister, Lucas Papademos, reached the same conclusion, and argued that further forced debt relief would be counterproductive. See "Forcing Greek Restructuring Is Not the Answer," *Financial Times*, October 21, 2011. The more conventional opinion was that "Greece, which is unambiguously insolvent, ought to have a hard but orderly write-down." See "How to Save the Euro," *Economist*, September 17, 2011, 11.

7. See for example Ambrose Evans-Pritchard, "German Push for Greek Default Risks EMU-wide Snowball," *Telegraph*, October 10, 2011.

8. Of the total eligible private holdings of €206 billion, €6 billion was not exchanged (Zettelmeyer, Trebesch, and Gulati 2012, 5).

9. Other bank losses brought the total amount of bank recapitalization needed to €50 billion (IMF 2012c, 28).

10. In February 2012, Citigroup's chief economist had raised the probability of a Grexit in the next 18 months from between 25 percent and 30 percent to 50 percent (Buiter and Rahbari 2012). He later raised the probability to 90 percent. Kate Mackenzie, "Buiter's Now Predicting Grexit Probability of 90%," FT Alphaville, July 26, 2012.

11. Government financial assets equal the difference between gross debt and net debt.

12. Actual end-2012 debt was €304 billion. The buyback had extinguished about €20 billion net, so without the December package the end-2012 debt would have stood at about €324 billion, significantly below the October WEO figure of €344 billion (IMF 2012b). Zsolt Darvas (2012) had noted at the time that the WEO's projected end-2012 debt buildup could not be fully explained.

13. Matthew Dalton and Costas Paris, "IMF Pushes Europe to Ease Greek Burden," *Wall Street Journal*, August 6, 2012; Dina Kyriakidou and Lesley Wroughton, "Exclusive: IMF, EU Clash over Greece's Bailout," Reuters, September 26, 2012.

14. Peter Spiegel, "Eurozone Agrees Greek Aid Deal," *Financial Times*, November 27, 2012; James Kanter, "European Finance Ministers and I.M.F. Reach Deal on Greek Bailout Terms," *New York Times*, November 26, 2012; EC (2012).

15. Prior to the PSI debt exchange the ECB exchanged at full face value its holdings of Greek public debt acquired in the SMP at market prices. SMP profit returns to Greece are placed by the IMF at €9.3 billion through 2020 (IMF 2013c, 87). At the end of 2011, the ECB and euro area national central banks (NCBs) held €56.5 billion in Greek public bonds (Darvas 2012, 4; Reserve Bank of Australia 2012, 31). The Greek Ministry of Finance provides a narrower measure of the holdings of the ECB itself at the end of 2011, amounting to €42.7 billion (Ministry of Finance 2012a). In appendix table 7A.1 the time profile of maturities on the narrower ECB estimate during 2012–20, as reported in the latter source, is applied to the broader ECB-NCB total for end-2011 to obtain stocks and flows through 2020.

16. The corresponding IMF figures were €31.8 billion and €10.8 billion, respectively (IMF 2013c, 87).

17. For 2013, the growth estimate is from Consensus (2014). The primary surplus is from Reuters, "Greek PM Says Budget Surplus Tops Forecast, Allows Spending," February 15, 2014.

18. Note that adopting the 60th percentile of annual growth in 1990–2012, as in chapter 6, would set the high benchmark at 3.4 percent, no different from the baseline range in 2015–18. Given the severity of the Greek recession/depression, stronger snapback growth is a reasonable premise for the favorable scenario.

19. Effective interest rates can be calculated by comparing these payments against the stock of debt outstanding at the end of the previous year.

20. Detailed projections for interest payments and other elements of debt flows and stocks during 2013–16 were kindly made available by IMF experts.

21. The first IMF program for Greece in the euro area debt crisis was a three-year Stand-By Arrangement beginning in May 2010. The second program was an Extended Fund Facility program for four years beginning in March 2012.

22. Harry Papachristou and Lefteris Papadimas, "Greece resumes protracted bailout talks with lenders," Reuters, February 24, 2014. See appendix table 7A.1 for annual disbursements of IMF and euro area official lending.

23. The exception is about €9 billion in residual borrowing needs in 2014–15 (table 7A.1). This modest financing gap is of the same general magnitude as the cumulative €10.9 billion in "unidentified" financing projected for 2014–15 in the IMF program projections (IMF 2013k, 60).

24. Optimists might see the decline of spreads on restructured 10-year bonds to the range of 500 basis points in March 2014 (from 2,000 basis points immediately after the restructuring and 1,000 basis points by end-2012; Thomson Reuters Datasteam) as evidence that Greece is already poised to reenter the market. However, although Greek authorities apparently plan to rebuild the yield curve relatively soon through modest issuances of three- to five-year obligations, it would be misleading to interpret the spreads on restructured 10-year obligations as indicative of rates at which Greece could place sizable amounts of new long-term bonds. The restructured debt is relatively small, seems unlikely to be restructured again, and has special characteristics such as UK rather than domestic legal jurisdiction. These differences also mean that the spreads on the restructured obligations are not directly comparable with spreads on Greek obligations in 2010–11 prior to the restructuring. They are thus not included as representing Greek sovereign risk after 2011 in figure 1.1 (chapter 1) showing

sovereign spreads for euro area periphery economies.

25. Robin Wigglesworth and Elaine Moore, “Greek €3 billion Bond Sale Snapped Up,” *Financial Times*, April 10, 2014.

26. The IMF baseline implies some market access beginning by 2018 and full reliance on the market after 2020. It suggests that if the debt level were down to 115 percent of GDP, Greece could borrow at a spread of 450 to 600 basis points, based on recent high-debt European country experience plus a premium for Greece’s debt restructuring, with the spread rising by 10 basis points for each percentage point increase in the debt-to-GDP ratio (IMF 2013c, 87).

27. If political constraints limit the primary surplus to a ceiling of 2.5 percent of GDP, as in the final exercise considered in chapter 6, the need for relief could be greater, because by 2020 the debtto-GDP ratio in the adjusted baseline would stand at 135 percent instead of 127 percent.

28. Baseline debt holdings in 2020 are: private, €80 billion (short term, exchange bonds, pre-2014 debt); official, €246 billion (IMF, GLF, EFSF, EFSF interest capitalization, ECB); and Greek official subsectors, €18.7 billion (table 7A.1).

29. The outlook prior to the December official relief package was for debt to peak at 192 percent of GDP in 2013 and then decline to 148 percent by 2020. Note that the IMF (2013c, 84) places the corresponding impact of the December package at 17.2 percent of GDP by 2020, composed of 10 percent for the buyback, 2 percent for interest rate reductions, 0.6 percent for elimination of EFSF fees, and 2.8 percent for remittance of SMP profits. Note further that figure 7B.2 is from Cline (2013a) and reflects the postrelief outlook as of early 2013. Its baseline for the period 2013–18 is slightly more pessimistic than in the updated estimates of appendix 7A and figure 7B.1, but the comparison between pre- and postrelief paths remains unchanged.