

EURO THEMES

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Greece: Assessing the new debt proposal

In previous research notes (*Greece: The (long) countdown to restructuring*, 11 May 2011; *Greece: What works and what does not*, 11 July 2011), we argued that owing to weak growth and sizeable fiscal slippages, Greece had reached a point at which, under realistic scenarios, it was de facto insolvent. Addressing insolvency, we argued, required either a full bailout of Greek bondholders by the EU or burden sharing between the public and private sectors, where the amount of private sector involvement (PSI) would be determined by EU authorities. The focus of this note is mainly twofold: first, to evaluate from an investor's perspective the PSI proposal; second, to provide our initial assessment of its impact on Greece's public debt sustainability.

Obviously, there are still many details to work out, but the results of last week's EU summit suggest that European authorities have moved closer to a scenario in which Greek bondholders would receive heavily subsidised recoveries. Indeed, we find that the effective haircut range in the preliminary proposal is between 0% and 19%, with an average of 10% – much lower than the 21% headline announcement.

In a market-friendly exchange, investors typically would not tender to face those NPV losses (even if small). However, the proposal should be considered as a soft restructuring, not a market-friendly exchange. Investors need to take into consideration the fact that if the proposal fails due to lack of investor participation, the chances of a more punitive debt default/restructuring increase significantly. Hence, a well-designed package that minimises the incentives for holdouts to "free ride" has a good chance of high participation, in our view. An important implication is that bond prices should converge further. The belly and the long-end of the curve are inexpensive relative to short-dated bonds.

Our debt sustainability analysis shows that assuming a successful, albeit limited, private sector investment (PSI), including a debt exchange with a participation rate of c.90%, a moderate buyback programme and, critically, larger, longer and cheaper credit from EFSF, public debt dynamics would improve significantly.

We cannot be too categorical about the main conclusions of this piece. First, many details are missing from the current PSI proposal, requiring several assumptions on our side. Second, execution risks on the PSI are considerable. Third, the details of the new EU-IMF programme are yet to be announced. Once these uncertainties are resolved we would be able to conduct a more precise evaluation of the likelihood of a successful exchange and of Greece debt dynamics.

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Not much PSI

One of the most remarkable features of last Thursday's EU announcement was how little PSI there would be. The headline number proposed by the Institute of International Finance indicated there would be a 21% NPV reduction. In our view, this number is significantly overstated.

The details on PSI are not in the official EU statement; however, the IIF web site (www.iif.com) offered more clarification, even if there are still some uncertainties. According to an exchange offer, which was signed by a number of large international banks and insurance companies (holding c.EUR74bn Greek bonds), investors would be offered four instruments:

- A par bond exchange into a new 30y bond
- A par bond offer involving rollover of maturing debt into a 30y bond
- A discount bond exchange into a 30y bond
- A discount bond exchange into a 15y bond

The principal would be fully collateralised by a 30y zero-coupon AAA bond in the first three instruments. The 15y discount bond would be partially collateralised through funds held in an escrow account.

The IIF states that each bond is priced to result in a NPV haircut of 21% (based on a 9% discount rate, or "exit yield"). As an example, we illustrate how the IIF obtains the NPV haircut for the first new instrument (hereafter, "Par 2041").

The coupon paid to the investor has the following structure: a step-up coupon of 4% for the first five years, 4.5% for the next five years and 5% for 2021-30. The NPV of the cash flows of the coupons discounted at a 9% discount rate equals 46.3. In addition, the investor's principal is fully guaranteed by a AAA entity. To get to the 79 total price quoted by the IIF, the implied present value of 30y AAA zero cash flow is about 32.7% of par. In fact, this is very close to the 32 average price of 30y principal-only German, French and Dutch zeros. The 21% NPV reduction is then calculated as the difference between 79 and the face value (100) of the bond. Indeed, the pricing of the remaining instruments are similar, with the last two instruments offering higher coupons but a discounted par value of 80%. The IIF states that all instruments will be priced economically equivalent to price a 21% NPV reduction (or haircut).

However, the 21% haircut is overstated in our view. To value it against 100 makes sense only when exit yields are not very different from the average coupons at which the existing debt was issued. In current circumstances this method loses precision. To see how, imagine an investor tenders a GGB 4.3% July 2017 bond and receives exactly the same bond back. Obviously, the NPV loss is zero as the cash flows have not changed. However, discounted at 9% the bond is worth 79 and, therefore, under this definition, there would be an NPV loss of 21%, which is obviously wrong.

A more correct definition of the NPV loss (and the relevant one for individual investors deciding to tender or not) is to compare the present value (PV) of cash flows of the old bonds with those of the Par 2041 bond using the same exit yields. In Figure 1 we do that using the IIF suggested exit yield of 9%. It shows a different picture. For example, discounted at 9%, the cash flows of GGB 3.7% Jul 15 bond result in a price of 82.9, above the price of the new "Par 2041" at a 9% yield of 79. Hence, the NPV loss would be 4.7% ($79/82.9-1$). In general the NPV losses (or haircuts) under the IIF exchange would be between 0% and 19% depending on the bond.

Figure 1: Outstanding GGBs priced with the suggested exit yield

Bonds	Outstanding nominal size (in bn)	Current Yield	Current Price	9% Exit yield	% NVP loss if tendered(*)
GGB 4.300% Mar 12	14.5	36.0%	83.11	97.05	-18.6%
GGB 5.250% May 12	8.0	36.3%	80.38	97.11	-18.7%
GGB 4.100% Aug 12	7.7	33.2%	76.94	95.22	-17.0%
GGB 7.500% May 13	2.5	27.2%	74.29	97.54	-19.0%
GGB 4.600% May 13	9.1	26.4%	71.37	92.90	-15.0%
GGB 4.000% Aug 13	5.9	26.1%	67.75	90.94	-13.1%
GGB 6.500% Jan 14	4.6	26.1%	67.21	94.64	-16.5%
GGB 4.500% May 14	8.5	24.0%	63.05	89.21	-11.4%
GGB 5.500% Aug 14	12.5	23.8%	62.99	90.96	-13.2%
GGB 3.700% Jul 15	9.6	18.1%	61.57	82.90	-4.7%
GGB 6.100% Aug 15	8.0	20.9%	61.89	90.45	-12.7%
GGB 3.600% Jul 16	7.8	15.7%	60.28	79.07	-0.1%
GGB 5.900% Apr 17	5.0	17.8%	59.09	86.53	-8.7%
GGB 4.300% Jul 17	11.4	15.6%	58.05	78.97	0.0%
GGB 4.600% Jul 18	7.7	15.0%	56.72	77.90	1.4%
GGB 6.000% Jul 19	15.5	16.2%	56.12	83.42	-5.3%
GGB 6.500% Oct 19	8.2	15.9%	58.20	85.83	-8.0%
GGB 6.250% Jun 20	5.0	14.4%	60.54	83.62	-5.5%
"New Par 2041"	151.4			79.00	

Note: This table includes all "plain vanilla", fixed-coupon bonds with size over €1.5bn. In fact the total nominal amount (€151bn) is very close to the total amount implied in the IIF document for 2011-2020 maturities (the IIF assumes a participation of EUR135bn, which corresponds to a 90% participation rate; ie, an implied total amount of EUR150bn). Alternatively, we also think the €150bn of total 2011-2020 GGBs outstanding implied by the IIF may have come from €197bn bonds less ECB holdings of €45-50bn, given that the ECB has indicated that it will not participate in any PSI.

(*) The NPV loss is computed as $(79 - \text{Price of old bond at 9\% exit yield}) / (\text{Price of old bond at 9\% exit yield})$.

Source: Barclays Capital

Figure 1 illustrates several other points. First, this rescheduling exercise is equivalent to asking investors to roll over debt at, or slightly below, current coupons in exchange for guaranteed principal. The guaranteed-principal "kicker" is worth roughly EUR25 per each EUR100 of face (32.7 of the zero-coupon versus 7.5, which would be the NPV of 100 in 2041 discounted at a 9% yield). Hence, if the rescheduling works, it is because Greece can buy the guarantee at an effective cost of (almost) zero.¹ Second, effective NPV losses are much lower than the 21% headline haircut mentioned by the IIF. Third, if investors were to consider this a "market-based" debt exchange, where the decision to tender is based on the assessment of the PV of the exchanged instrument (Par 2041) versus PV of the old bond at the same exit yield, then the participation rates would be well below the 90% participation rate suggested in the IIF document. We will revisit the issue of participation in the next section.

¹ According to the proposal, Greece would pay the funding cost of the zero-coupon to the EFSF, but at the same time, the price of the zero-coupon would increase over time at a rate similar to the EFSF funding cost. Gross debt increases, but net debt does not.

To tender or not to tender

Crucial in the decision of whether to tender or not is the fair exit yield. Some circularity is unavoidable: the exit yield affects the participation rate (as it alters the economics of tendering versus not tendering) and the participation rate affects the exit yield (as it affects the debt dynamics after the rescheduling). We address this circularity by analysing the likely outcomes (in terms of participation rates) under alternative exit yields and then run a debt sustainability analysis (making assumptions about the participation rate) in the following section.

In Figure 2 we show the price of old bonds and the new Par 2041 under different exit yields, as well as a "stress scenario" in which yields stay high and the curve remains inverted. At the 9% yield suggested by IIF, the price of only two old bonds are lower than the new "Par 2041". As the exit yield falls, the number of bonds with a lower price than the new Par 2041 increases, but unless the exit yield is as low as 5% (which obviously does not make sense), the percentage of those bonds is relatively small. Mathematically, a lower exit yield makes the Par 2041 more attractive relative to the shorter bonds as it has longer duration and therefore its price increases relatively more (however, only if the drop in exit yield is large enough, as prices of the short-end bonds are much higher than the Par 2041 at a 9% exit yield).

Interestingly, the Par 2041 also offers more protection in the "stress scenario".² While the "Par 2041" is a 30y bond, its duration is much shorter than a normal 30y Greek bond because the PV of the 30y principal is insensitive to changes in Greek yields (as it is a 30y AAA risk).

Figure 2: Participation based on economic value at different exit yields

Bonds	Outstanding nominal size (bn)	5% Exit yield	7% Exit yield	8% Exit yield	9% Exit yield	Stress scenario
CGB 4.300% Mar 12	14.5	99.52	98.27	97.66	97.05	78.87
CGB 5.250% May 12	8.0	100.15	98.61	97.86	97.11	75.84
CGB 4.100% Aug 12	7.7	99.08	97.12	96.16	95.22	73.17
CGB 7.500% May 13	2.5	104.20	100.79	99.14	97.54	68.40
CGB 4.600% May 13	9.1	99.31	96.02	94.44	92.90	64.10
CGB 4.000% Aug 13	5.9	98.08	94.41	92.65	90.94	58.99
CGB 6.500% Jan 14	4.6	103.34	98.85	96.71	94.64	57.90
CGB 4.500% May 14	8.5	98.70	93.79	91.46	89.21	52.55
CGB 5.500% Aug 14	12.5	101.38	95.98	93.42	90.96	52.99
CGB 3.700% Jul 15	9.6	95.41	88.87	85.82	82.90	51.12
CGB 6.100% Aug 15	8.0	103.94	96.88	93.59	90.45	52.09
CGB 3.600% Jul 16	7.8	93.96	86.11	82.49	79.07	50.22
CGB 5.900% Apr 17	5.0	104.36	94.91	90.60	86.53	50.54
CGB 4.300% Jul 17	11.4	96.46	87.17	82.94	78.97	47.37
CGB 4.600% Jul 18	7.7	97.69	87.09	82.34	77.90	47.30
CGB 6.000% Jul 19	15.5	106.44	94.04	88.53	83.42	49.08
CGB 6.500% Oct 19	8.2	109.90	96.91	91.15	85.83	51.04
CGB 6.250% Jun 20	5.0	108.79	95.14	89.14	83.62	52.13
"New Par 2041"		101.88	88.54	83.36	79.00	
Economic participation (bn)		102.7	26.9	26.9	19.2	151.4

Note: Blue cells denote bonds with PV value lower than the PV of Par 2041 bond at the same exit yield. Source: Barclays Capital

² For the "stress scenario", we used the Greek government bond yield curve from 18 July, when yields were highest and the curve was significantly inverted, with 2y, 10y and 30y GGBs trading at 35%, 16.3% and 11.3%, respectively.

These math results are useful in understanding potential participation rates. However, the final outcome of Greece's soft restructuring is likely to be binary. Investors need to decide whether or not to tender based on the pay-off under two alternative scenarios:

1. A "good" scenario, in which the debt rescheduling is successful and the exit yield is 9% or lower; or
2. A "bad" scenario, in which the exercise fails and Greece restructures under terms that are significantly more punitive for investors than the current proposal.³

In the good scenario, a reasonable exit yield (with a credible plan for Greece, as we discuss in our debt sustainability analysis in the following section) could be below 9%. However, even those lower yields will not be enough to make the tender more attractive. Investors may be willing to accept some NPV losses given the advantage of having a potentially more liquid benchmark bond (the new Par 2041), but this is unlikely to be enough of a kicker.

Note that we need to interpret the "low" exit yields in the "good scenario" with caution. We do not foresee Greece returning to the bond market at low yields in the near term, certainly not before 2015, and possibly even later. By 2015, we would expect a primary surplus of about 2.5% of GDP and some of the structural reforms to start bearing some fruit, leading to nominal GDP growth of about 3%. And depending on success/failure of the new EU/IMF programme, an exit yield of 9%, implying 500bp over Bund (4%), is reasonable in our view.⁴

However, when making their decision, investors need to incorporate the possibility of a very adverse default/restructuring scenario. As discussed above, we included a stress scenario in Figure 2 where yields may be even higher and the curve inverted. In a bad scenario where this rescheduling exercise fails, Greece may be forced to restructure its debt. In that case, investors would suffer much larger losses as recovery prices would likely be much lower than the value of 79 of the current offer. Those losses would be particularly sharp for short-dated bonds that trade at relatively high prices and, hence, would suffer more (in percentage terms) in a failed exercise. This implies that holders of short-dated bonds would need to weigh the implications of holding out and potentially facing a default.

Implementation risks in the debt exchange are considerable and should not be dismissed, including the risk of a low participation rate. In fact, asset managers and many insurance companies are not represented by the IIF and may decide not to participate if they perceive there is not a credible threat of default.

This takes us to the next point. Based on pure market voluntary mechanism this exchange is unlikely to achieve anything close to the 90% participation rate assumed by the IIF. However, it may be wrong to consider this as a pure voluntary exchange. This is a soft restructuring. The offer is likely to be subject to a minimum participation rate (probably 90%) with a credible threat for those not participating of a more punitive restructuring. It would be credible as EU authorities see some PSI as a sine qua non to keep supporting Greece.

Indeed, Greece's experience may end up being very similar to Uruguay's in 2003. In that exercise, the IMF and the US Treasury said they would support Uruguay only if the exchange was successful. There was a minimum participation threshold of 90%, and if participation did not reach 80%, the Treasury and the IMF would not lend their support and the alternative would be default (note: if the participation rate was in the range of 80-90%, Uruguay reserved the right to complete the offer at its discretion). Uruguay kept the level of

³ In 11 May 2011 Greece: the (long) countdown to restructuring, we estimated that recovery rates could be in the 20s in a scenario where debt relief is imposed exclusively on the private sector.

⁴ Assuming a 50% recovery, spreads of 500bps imply a cumulative default probability of roughly 40% in 5 years.

tendering secret to keep the incentive in play. The bonds produced a meaningful maturity extension and the NPV loss was low. In the end, the participation rate was 93%. Later, Uruguay reopened the exchange for holdouts and paid the residual investors. The rating agencies called it a selective default (S&P kept Uruguay on Selective Default from 16 May 2003 to 2 June 2003, and Fitch rated it SD from 16 May 2003 to 17 June 2003), but there was no real lack of payment.

Obviously there are some differences between the two situations, including the fact that Uruguay had much better solvency ratios than Greece (indeed, the country issued soon after the restructuring). However, the comparison highlights the fact that a well-designed programme (with a credible threat of more punitive terms if it fails) can produce a high participation rate.

Another market implication is potentially more price convergence. In our good scenario, most bond prices should converge to 79. In the bad scenario, prices should converge toward recovery values.

Preliminary assessment of debt dynamics post EU proposal

As we have argued above, the objective of authorities should be to design an exchange – with a minimum participation level of 90% before it becomes effective – that resolves the coordination problem (recall that in the Uruguay case, participation reached 93%). Subject to a successful PSI (ie, debt exchange plus buyback programme), debt dynamics would improve significantly; however, the improvement is largely on account of the public sector debt relief.

Before we examine the current proposal in detail, it is useful to revisit two other relevant scenarios. Many investors are familiar with the parameters we have used in the past to establish that Greece was insolvent. We have assumed a realistic primary surplus by 2015 would be in the range of 2-3% of GDP; we have also assumed nominal GDP growth of 3% (since 2014 onwards) and a marginal borrowing cost of 300bp over Bunds. Under those assumptions insolvency was obvious (see line “Old baseline” in Figure 3). We have also argued (see *Greece: What works and what does not?*, 11 July 2011) that replacing all the outstanding debt with EFSF loans with maturities of more than 20y and an interest rate of c.3.5% would stabilise Greece's debt-to-GDP ratio through 2030 (see line “EFSF guarantees all outstanding debt” in Figure 3).

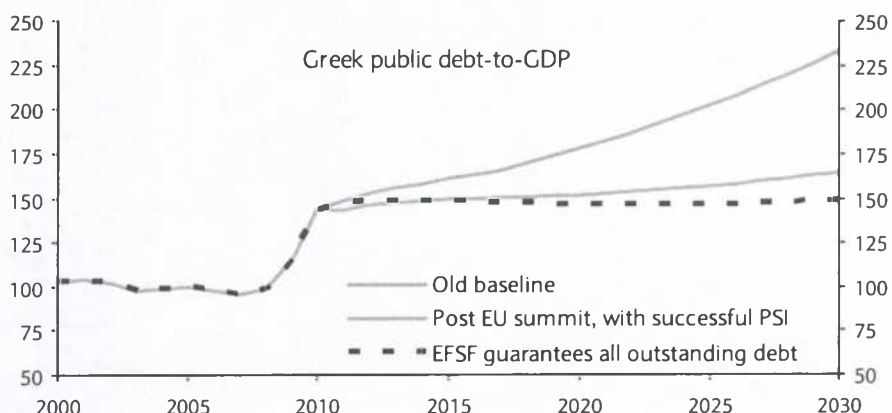
Assessing the amount of public sector debt relief requires an estimate of the amount of EFSF loans to Greece. Funding needs for fiscal deficits and debt redemptions through end 2014 amount to c.EUR105bn. Funding of about EUR60bn will be required for the PSI process (c.EUR40bn to buy the AAA zeros that will guarantee the EUR135bn of principal in the debt exchange operation; in addition, c.EUR20bn is to be committed for buybacks, as indicated by Chancellor Merkel in the press conference following the EU summit). So, the overall funding needs are about EUR165bn. The funding provided by the new EU/IMF package of EUR109bn (of which EUR80bn is EFSF funding) plus the c.EUR50-60bn from PSI (debt exchange + debt buyback) approximately cover the EUR165bn funding needs.

Assuming that the terms of the EUR80bn EU loans in the first programme are changed in line with the new EFSF loans, then a total amount of EUR160bn (ie, EUR80bn from the first programme and EUR80bn from the new programme) will be set at the new terms of 15-30y maturities at c.3.5%. We estimate a NPV reduction of about 31% from EFSF loans with an average maturity of 23y at a rate of c.3.5%, compared with an “average” Greek bond with a 7y

average maturity and average coupon of c.5% (using a 6.75% exit yield).⁵ In sum, for a package of €160bn, the NPV debt reduction is of c.€50bn. Obviously, if we assume a higher exit yield of 9%, the NPV debt relief would be larger, of c. €66bn.

How much debt relief we are likely to get from PSI? In the event of a successful debt exchange, a participation rate of over 90% could be achieved, which would imply the amount of bonds exchanged is close to EUR135bn, as indicated in the IIF document. In addition, if a buyback programme is implemented with EFSF loans of EUR20bn at an offer price of, say, 70 (targeting long-dated bonds) it could achieve a buyback of EUR28bn. We believe some of the mark-to-market investors who bought Greek bonds at prices below 70 would be glad to participate and pocket some gains. Investors who bought at prices close to or above 70 may incur some losses to avoid an event of default if too many investors hold out. In Figure 3, the line "Post EU summit, with successful PSI" shows how the debt-to-GDP ratio improves considerably relative to the old baseline and moves the debt dynamics close to a scenario where the EFSF guarantees all outstanding Greek debt (full bailout option).

Figure 3: Debt sustainability after the EU summit



Source: Barclays Capital

Final thoughts

It seems clear from the above discussion that both the EU and the IMF will be engaged with Greece in the coming years. For the foreseeable future, Greece's fiscal and structural policies will be largely set in Brussels, in coordination with the IMF. This is the "price of EU's bail-out" that Greece will need to pay. We should not dismiss the possibility that Greece's performance may disappoint even under a new programme. Greece's primary deficit by end 2010 was nearly 5% of GDP, and given the large fiscal slippages, little fiscal consolidation is expected for 2011 (possibly a primary deficit of over 3% of GDP). Therefore, we would not expect to move to a primary surplus until at least 2013. This means that even with a successful PSI, debt is likely to hover around 150% of GDP in the near term. And as we argued earlier, we do not see Greece returning to the markets in the coming years, surely not before 2015, and possibly later.

The economic problems in Greece are structural in nature and will require long-term monitoring by the EU/IMF and continued technical assistance in many areas (including public sector management, tax policy and economic statistics, to name a few). We consider

⁵ In fact the debt relief from the public sector relative to the original 3y EU loans at a rate of over 5% is even higher.

that the new EU-IMF programme will have to be revisited, with targets aimed at boosting growth, creating an adequate fiscal infrastructure, including a streamlined public sector, restructured loss-making public enterprises, and an efficient tax agency, as well as enhancing competition across different sectors and professions. Realistic privatisation targets would also be welcome. Clearly, reaching a significant primary surplus will remain a *sine qua non* for programme credibility, albeit the new targets should be set consistent with revised growth prospects. But we will need to wait until 1) the details of the next EU-IMF programme are announced, and 2) PSI is completed before making a more precise evaluation of Greece debt dynamics.

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