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February 22, 2012

# Sovereign Credit

## On the Greek Debt Restructuring (Part I)


*We present investors with our first take on Greece's second bailout package and private sector involvement. The plan will likely put the sovereign on a more sustainable debt path, but official targets, along with some key assumptions, look ambitious. Thus, solvency seems far from assured. Implementation and politics remain key risk factors. So the quarterly compliance reviews will continue to be critical points for market participants. We also analyze what's priced in and provide an assessment of several PSI valuation issues.*


**Bailout on its way, PSI to follow:** The Eurogroup decision to approve a further €130bn rescue package reduced the near-term risk of a disorderly default. Yet many risks are still out there, and smooth execution of the debt restructuring encompassing a 53.5% principal reduction cannot be taken for granted.

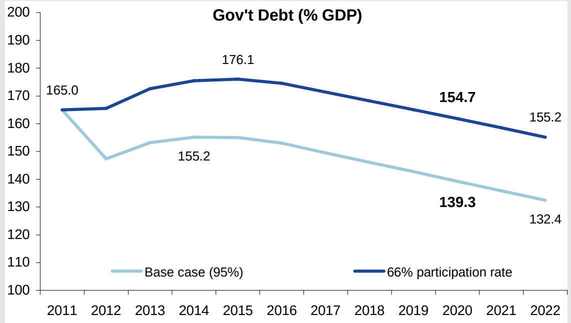
**Implementation and politics:** With small shocks likely to cause substantial deviations from the central trajectory, the quarterly compliance reviews will remain crucial risk events. And, with an election possible in April, political developments add an extra layer of complexity.

**Still far from sustainable?** The new bailout plan would put Greece on a more sustainable debt path, we think. Yet even if the challenging goal of 120.5% debt/GDP in 2020 were eventually met, this would still be far from the 90% threshold that we deem to be sustainable.

**Going coercive?** As almost universal PSI participation is crucial to stay on track and get close to the official debt reduction goals, we believe that collective action clauses will likely be deployed and used – potentially even in a punitive way.

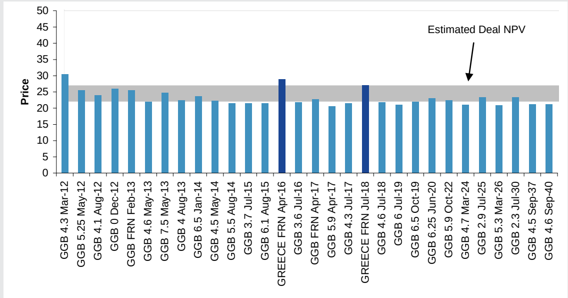
**What's priced in and strategy implications:** Current secondary market prices are in line with our estimated NPV of 22-27 cents for the PSI transaction.

### Trending downwards – but not that quickly




Source: Morgan Stanley Research

### What's priced in?




Bonds with an outstanding notional of at least €2bn; dark blue bars represent Greek bonds governed by international law
Source: Bloomberg, Morgan Stanley Research

# On the Greek Debt Restructuring (Part I)

## Executive Summary

- **Key features of the second bailout program:** A total of €130bn is agreed to be disbursed in tranches until 2014, conditional to quarterly checks. The goal is to reduce debt/GDP to 120.5% in 2020 from an estimated 165% at the end of last year. Main measures include:

  (i) Additional retroactive lowering of the interest rates of the Greek Loan Facility so that the spread over the 3-month Euribor amounts to 150bp;
  (ii) The income generated by the Eurosystem holdings of Greek Government bonds will be disbursed to eurozone member states, which *may* then decide to use them to further improve Greece's debt sustainability;
  (iii) Eurozone governments have committed to pass on to Greece an amount equal to any future income accruing to their national central banks stemming from their investment portfolios until 2020;
  (iv) PSI with a 53.5% principal reduction.

- **What it means for debt sustainability:** Greece's debt sustainability – provided that the program is executed in a full and timely manner – would improve in the medium term. Yet reaching the target of 120.5% debt/GDP by 2020 might be ambitious, in our view. Implementation and politics remain key risk factors. The quarterly compliance reviews will remain crucial risk events.

- **Assessing value of the three components of the PSI**

  (i) 15% notional of EFSF notes with 2Y maturity: although likely to be a cash-equivalent initially, potential EFSF credit spread widening may weigh on the value of the notes;
  (ii) 31.5% notional of 30Y amortizing Greek bond: the escrow is unlikely to serve as a meaningful rolling interest guarantee – we see the exit yield in a range of 13-17% in the medium term;
  (iii) Detachable GDP-linked securities with a notional amount equal to the face amount of the new Greek bonds: as details are yet to be seen, we draw a comparison to the Argentine GDP warrant and determine the maximum theoretical value (1.3-1.8 cents).

- **What's priced in:** Current secondary market prices are in line with our estimated NPV of 22-27 cents for the PSI.

### Timeline of risk events

**February 23**
*Greece likely to introduce legislation on collective action clauses.*

**February 24-26**
*G20 finance ministers and central bank governors meeting in Mexico, to discuss boosting IMF resources.*

**February 27**
*German parliament to vote on bailout package and use of the EFSF to secure new Greek bonds.*

**February 28**
*Finnish parliament likely to vote on bailout package in order to approve higher EFSF guarantees.*

**Early March**
*IMF Board to approve Greek bailout program.*

**March 1**
*Dutch parliament likely to vote on bailout package in order to approve higher EFSF guarantees.*

**March 1-2**
*EU Summit to decide whether to allow the ESM and EFSF to run in parallel. Final imprimatur to the second Greek bailout package likely.*

**March 3-4**
*PASOK Party's National Conference.*

**March 8**
*The last day to sign up for Greek bond swap offer.*

**March 8**
*ECB Governing Council meeting and press conference.*

**March 9**
*Responses from investors on the bond swap offer are processed.*

**March 12**
*The actual Greek debt swap takes place.*

**March 12-13**
*Eurozone and EU finance ministers meet.*

**March 18**
*Elections of new PASOK leader.*

**March 20**
*Greece is due to repay €14.5bn of debt. If the bond swap goes ahead, this would be covered, i.e., Athens will avoid defaulting.*

**March 30-31**
*Informal meeting of eurozone and EU finance ministers and central bank governors in Copenhagen.*

**April 4**
*ECB Governing Council meeting and press conference.*

**Mid April**
*Possible parliamentary election.*

**April 20-22**
*IMF meeting in Washington on boosting IMF resources.*

## Second bailout package approved

The eurozone finance ministers reached an agreement with the Greek government on a further rescue program providing additional funding of up to €130bn until 2014 – subject to Greece complying with a fiscal and structural reform agenda (full statement here).

The goal is to bring down Greece's debt/GDP to 120.5% in 2020 from around 165%, on our estimates, at the end of last year – thus reaching roughly the same target as before (120%). To this aim, Greek bonds held by private sector investors will face a 53.5% principal reduction, slightly higher than previously envisaged. Private sector involvement (PSI) is in the process of being launched too.

The disbursements for the PSI deal and the final decision to approve the guarantees for the second program are subject to PSI going through successfully and confirmation by the eurozone finance ministers, based on an assessment by the Troika, of the legal implementation by Greece of a number of previously agreed fiscal measures.

The official sector will decide on the precise amount of financial assistance to be provided in the context of the second Greek program in early March – most likely at the European Summit on March 1-2 – once the extent of PSI participation is known and Greece has implemented the outstanding measures.

While not all details are available, this note summarizes our views on Greece's debt sustainability, addresses several open questions and discusses the main strategy implications. We may update and refine some of the conclusions – as well as our understanding of the key inputs – as more information becomes available.

## Will this restore debt sustainability?

**This plan would put Greece on a more sustainable debt path,** we think. Put differently, Greece's debt sustainability – provided that the program is executed in a full and timely manner – would improve in the medium term. Yet reaching the target of 120.5% debt/GDP by 2020 might be ambitious, in our view.

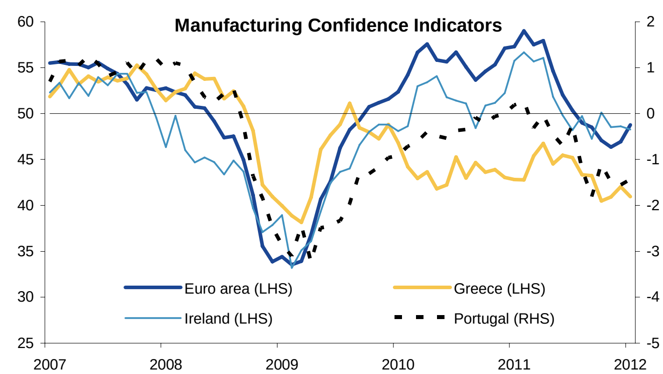
Indeed, Greece's near-term economic outlook remains very uncertain. 4Q GDP declined by 7% relative to the corresponding quarter of the previous year. The data are only presented on a non-seasonally adjusted basis, given that a break in the time series has made the time span on which to apply the seasonal adjustment too short, and that there have been changes in the economic indicators used in the estimation of quarterly GDP figures. Yet the number points to yet another large economic contraction on a *sequential* basis, in our view.

The manufacturing PMI, at around 40.1 in January, remains close to its record low of approximately 38.2 and is still far below the threshold of 50 that separates expansions from recessions. This is a diffusion index. As such, it is not only telling us that the economy is shrinking, but it's also signaling that the pace of contraction on the manufacturing side is not easing at this stage.

Conversely, the manufacturing PMI for the eurozone as a whole has improved in recent months and is now pointing to tentative signs of stabilization at very weak levels of economic activity, possibly consistent with stagnation or a very shallow outright contraction in 1Q.

Exhibit 1

**Greek economy still shrinking fast**




PMI manufacturing indices for all countries expect for Portugal, where this indicator is not available and has been replaced by the European Commission's industrial sentiment index (standard deviations from post-EMU average).
Source: Markit, European Commission, Morgan Stanley Research

Thus, while here are many moving parts in the calculation of the debt trajectory several years ahead – and changing the underlying assumptions might lead to different results – we feel comfortable with our cautious and below-consensus outlook, which is likely be more conservative than the latest official forecasts (still unpublished), especially on the fiscal side.

Achieving something close to 120% debt/GDP in 2020 is not impossible, in our view. But our sensitivity analysis suggests that only a combination of very strong growth and sustained primary budget surpluses can materially change the picture for the better. We view this as a low probability. Very strong privatization receipts (not our base case) is another crucial assumption to get close to the official medium-term targets for debt reduction.

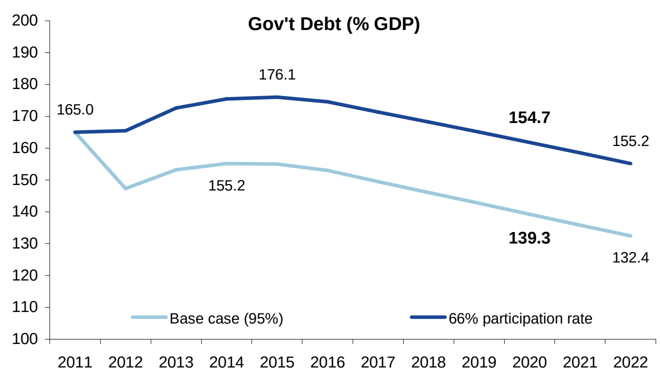
Exhibit 2
**Greece: Key economic forecasts**

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017+ |
|---|---|---|---|---|---|---|
| *Real GDP growth (%, yoy)* | -5.0 | -0.5 | 1.0 | 1.3 | *1.5* | *2.1* |
| *Inflation (%, yoy)* | -0.8 | -0.5 | 0.0 | 0.5 | *1.0* | *1.5* |
| *Primary gov't balance (% GDP)* | -1.5 | 0.0 | 1.5 | 2.5 | *3.5* | *3.5* |
| *Privatization proceeds (€bn)* | 4.0 | 0.5 | 0.0 | 0.0 | *0.0* | *0.0* |

Source: Morgan Stanley Research

In addition, although a more substantial principal reduction on the Greek bonds held by *private sector* investors, as well as a limited *official sector* involvement, has improved the debt trajectory relative to our previous baseline scenario, we think that a more adverse economic and fiscal outlook than envisaged before is not the only obstacle to meet Greece's long-term debt reduction targets. The assumption on *substantial* privatization proceeds appears to be a crucial one to increase the probability that a fiscal consolidation of the magnitude that seems required might materialize over time (see following sections).

Exhibit 3
**Falling meaningfully – but not down to debt target**




Source: Morgan Stanley Research estimates

### So is this enough?

We think that this plan may still be insufficient to bring Greece's debt/GDP to 90% – which we deem to be the sustainability threshold for Greece, i.e., the threshold that would allow Greece to regain market access over time (see *Greece After the Second Bailout*, July 25, 2011).

### Why not try to achieve a lower debt/GDP?

Apart from feasibility, given such an unfavorable starting point, we think that Greece's debt/GDP target of roughly 120% in 2020 may have been chosen to avoid possible contagion to other European countries. After all, this is equal to or higher than that of any other country in the eurozone. So setting a target for Greece below that level might have been interpreted by some market participants as an indicator that eurozone leaders are not comfortable with the level of debt of some other members. Thus, it's plausible that some investors could have tried to anticipate broader debt relief action.

In our view, other countries with debt/GDP of 120%, e.g., Italy, while facing liquidity problems, seem rather more sustainable. For example, Italy *already* has a primary budget surplus, its current account deficit is relatively small, and its economy compares more favorably to Greece on a number of measures. What's more, Italy's new government seems to be delivering on its fiscal adjustment and structural reform program, with welcome measures on sector liberalization and administrative simplification – on top of consolidating the public finances.

## On official sector involvement

That official creditors contribute to reduce Greece's debt burden is a positive factor – from a sustainability perspective – although the overall impact is not huge. While several details still need to be clarified, the eurozone finance ministers have acknowledged that the Eurosystem, i.e., the ECB and the national central banks (NCBs), have bought Greek government bonds – in the context of the SMP bond purchasing program – for monetary policy purposes. Although the ECB has not published any statement yet, the eurozone finance ministers have explained that these bonds will be protected from losses.

What's more, the ministers also noted that the income generated by the Eurosystem holdings of Greek Government bonds will contribute to the profit of the ECB and of the NCBs. The ECB's profit will be disbursed to the NCBs. In turn, the NCBs' profits will be disbursed to eurozone member states, which *may* then decide to use them to further improve Greece's debt sustainability.

In addition, to the extent that NCBs currently hold Greek government bonds in their investment portfolios, the respective eurozone governments have committed to pass on to Greece an amount equal to any future income accruing to their national central bank stemming from these portfolios until 2020. The benefit for Greece is likely to be somewhat limited. This should reduce Greece's debt/GDP by 1.8ppt by 2020 and lower the financing needs by around €1.8bn.

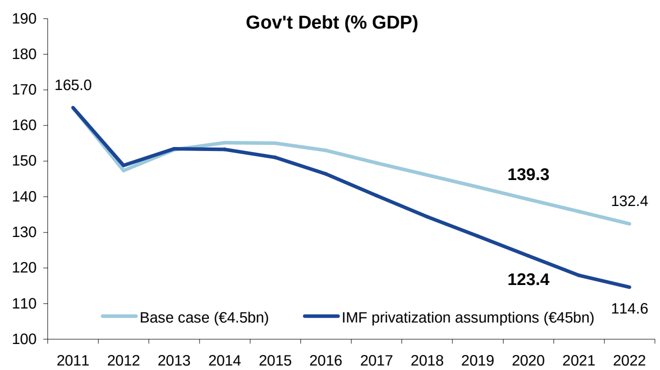
A further element of official sector involvement has to do with the eurozone governments' agreement to engineer an additional retroactive lowering of the interest rates of the Greek Loan Facility so that the spread over the 3-month Euribor amounts to 150bp, rather than 200bp for the first three years and 300bp thereafter. This should reduce Greece's debt/GDP by 2.8ppt by 2020 and lower the financing needs by around €1.4bn. For this to be effective, national procedures for the ratification of this amendment to the Greek Loan Facility Agreement will have to be initiated.

## Privatization boost remains to be seen

Privatization receipts are a crucial input for the Greek debt sustainability model. Greece has a substantial portfolio of assets. The latest *published* Troika analysis estimates further proceeds from privatizations of up to €45bn over time (although the new bailout program might well stretch them over a longer time period or, most likely, reduce the overall amount). Bond market participants seem somewhat skeptical at this stage, given limited granularity on the details.

Exhibit 4

**Privatization receipts – the crucial assumptions**




Source: Morgan Stanley Research estimates

We prefer to take a cautious stance too, and have factored into our base case a smaller relief coming from privatizations (less than €5bn), based on the partial available information on Greece's portfolio of real estate assets and on Greece's recent performance on this front. Yet Greece could privatize more, and there is a risk that our estimate might turn out to be too conservative further down the line – if extra technical assistance exerts some effect. Therefore, we will be monitoring the privatization processes to update our forecasts, and, while taking a rather conservative approach at this juncture, our scenario analysis also presents an alternative debt trajectory encompassing privatization proceeds roughly in line with official expectations. In this alternative scenario, Greece's debt/GDP does approach 120% in 2020 (although it stays above that figure, given our cautious economic outlook).

## Implementation risk and political uncertainty

The approval of the second bailout package for Greece means that one crucial downside risk, which could have precipitated the situation towards an outright default, has now been reduced significantly, at least for some time. Yet, apart from the issue of debt sustainability itself, a number of risks still remain and one cannot simply rule out that the whole process derails once again.

**On parliamentary approval in some eurozone countries**
A first risk has to do with approval of the second bailout package in some national parliaments. While not all countries require parliamentary approval, Germany, Finland and the Netherlands will have to carry out the relevant national procedures to allow for the provision by EFSF of:

- A buy back scheme for Greek marketable debt instruments for Eurosystem monetary policy operations;
- The eurozone's contribution to the PSI exercise;
- The repayment of accrued interest on Greek government bonds;
- The residual (post PSI) financing for the second Greek adjustment program, including the necessary financing for the recapitalization of Greek banks.

While still unconfirmed at this stage, it is also possible that some form of parliamentary approval is required in Slovakia and Slovenia.

**On strict monitoring and technical assistance**
The eurozone's leaders are keen to strengthen the mechanisms for the monitoring of implementation of the Greek program, which remains the responsibility of the Greek authorities. In this context, the Troika will establish for the duration of the program a monitoring capacity on the ground, including national experts, to work in close cooperation with the Greek government in order to ensure the timely and full implementation of the reforms. The upside risk in this strategy is that structural reforms to boost growth might take place more easily, given the extra push from the Troika. Yet, as we argued since the onset of the Greek crisis, the downside risk of this strategy might have to do with an inherent difficulty to accept external interference with domestic affairs in conjunction with deep austerity. Several episodes of social unrest have shown all too clearly that the extra-economic dimension of this tough adjustment program is at times unpredictable.

**On near-term implementation…**
In addition to the recent broad vote on fiscal austerity and reforms, the Greek government is required to comply with some 'prior actions', mainly related to unfulfilled fiscal and structural reform demands, by the end of February. In some cases, the parliament might need to vote on some of the individual measures set out in the Memorandum of Understanding. With the two largest political parties having committed to the conditionality of the second bailout package,

we think that imminent risks of derailment on this front are relatively contained, unless politicians change their minds.

**…and medium-term political risks**

There is, however, a more substantial risk further down the road. Despite written commitments from the leaders of the two main political parties, market participants might remain doubtful on the durability of such promises – which are not legally binding. With an election possible in April, and voting intentions showing diminishing support for the mainstream parties, there is a risk that the quarterly reviews – and hence implementation of the adjustment program – will continue to be a focal point for investors, given that the loan disbursements will remain subject to conditionality.

According to an article recently published on the *Kathimerini* newspaper's website (February 21, 2012), support for the two parties backing Greece's technocrat Prime Minister Papademos fell to an all-time low. The article cited a survey by pollster GPO, which was carried out on Feb 16-21, a week after lawmakers of the conservative ND and the Socialist PASOK parties had approved a severe austerity and structural reform package demanded by Greece's official lenders. Backing for ND stood at 19.4%, right now Greece's largest party, and at 13.1% for PASOK.

If people voted according to this poll, ND would fail to win an absolute majority in the election and would depend on the Socialists to govern. Those undecided or not intending to vote made up 27% (previously published polls show a higher percentage).

## Participation rate and CACs

As shown in Exhibit 3, the medium-term debt pattern remains extremely challenging also in a scenario of very high (i.e., 95%) participation rate. Indeed, the introduction of collective action clauses (CACs) into Greek law points to low tolerance for holdouts. Although the exact implementation strategy of the PSI is not yet clear, it seems that Greece may opt for either introducing exit consent or rely on investors voting for the CACs (see the next section).

As details are not available on the quorum for the CACs, it is difficult to assess the probability of success. However, we believe it unlikely that Greece will follow the UK/New York law footprint (i.e., 75% in the first meeting and 50% in the second one) as this would make it more difficult. Something equal/below 66% is more realistic, in our view. According to the IIF, their members control 70-75% of privately owned outstanding bonds.

**Box 1: General Considerations on Collective Action Clauses**

**Definition:** A collective action clause (CAC) allows a supermajority of bondholders to agree a debt restructuring that is legally binding on all holders of the bond, including those who vote against the restructuring.

**What qualifies as a supermajority in Greek international law bonds?** The required quorum can vary by the governing law and by the term that is intended to be changed. There are a few terms (maturity extension, change of coupon, principal reduction etc. that are usually called 'reserved matters') that typically require a 75% majority (of securities outstanding) on the bondholder meeting according to both UK (after 2004) and New York law. At any adjourned meeting, the necessary quorum is 50% of the outstanding principal amount of the bond.

**Implications on CDS:** Introducing CACs does not trigger CDS, while exercising them would most likely do so.

**Aggregation issue:** A 'typical' CAC applies to a single bond issuance; however, exercising CACs on a bond by bond basis would raise two main issues for Greece. First, investors could block the exercise of the CAC in some bonds where they own a large enough stake. Second, Greece would face significant coordination challenges. Therefore, Greece could enact a statutory collective action clause to address the aggregation issue. This could, for example, ensure that the terms of any untendered local law bonds would automatically be amended so that their payment terms match those of (one of) the new instrument(s) being issued in the exchange. Due to aggregation, the holdouts would have to acquire a blocking percentage of the aggregate of all the issues being restructured in order to impede the proposal. Even if holdouts were to acquire a blocking position in one series, they would still not be able to stop the participating bondholders from changing their instruments. It is worth highlighting, though, that in Uruguay's case, the aggregation voting threshold was 85%, higher than the typical 75% threshold of single series.

It is still to be seen if aggregation could be used to restructure bonds issued simultaneously in different jurisdictions. Hence, the supermajority is likely to be required bond by bond in international law bonds with existing collective action clauses, in order to exercise the CAC.

This would probably be sufficient to ensure a successful vote for CACs. However, some risks could materialise: i) international bonds are ruled by either UK or New York law, with higher quorum, and investors with concentrated positions could block the exchange in some particular bond (7% total bond outstanding); ii) some IIF members may find it difficult to swap some particular issues (i.e., CPI-linkers), due to related hedges; iii) bonds may have changed ownership over time, making last summer's IIF bond holding survey out-of-date.

### From voluntary to coercive?

The first page of the press release by the Ministry of Finance of the Hellenic Republic (February 21, 2012) does not clarify the strategy with regards to the voluntary vs. coercive restructuring, in our view:

*"The transaction is expected to involve a **consent solicitation** and an invitation to private sector holders of certain Greek bonds*
*[…] The Greek government will shortly submit to the Greek parliament a draft bill which, if passed, will introduce a **collective action clause***
*[…] If passed, this law will be available to be used in the implementation of the PSI transaction if necessary to achieve participation at the levels anticipated by the 26 October 2011 Euro Summit Statement."*

The second part of the above statement seems to imply a time consuming process where investors would be called upon to vote the CACs in the case of an unsatisfactory participation rate. On the other hand, the first sentence mentions consent solicitation (i.e., exit consent) and hints to the Greek willingness to speed up the process of binding holdouts, as investors would give consent to vote CACs while they exchange bonds. This would overcome the above described time constraint.

The use of exit consent would bind holdouts automatically, if the participation rate is higher that the quorum, and CDS would most likely be triggered, as the restructuring would be considered most likely coercive. As said, only the introduction of CACs (without exit consent) would keep the option of voluntary non-binding restructuring, but this could require a lengthy implementation time.

However, Greece could try to make the vote of CACs unnecessary by introducing punitive Collective Action Clauses. In fact, this could materially increase the participation rate, as investors may want to avoid a more punitive scenario. CDS contracts would not likely be triggered.

Given the latest developments, we believe a coercive restructuring triggering CDS seems to be the most likely outcome.

**Box 2: Impact of the bond restructuring on CDS contracts and March 12 bond-CDS basis**

As the PSI implementation presents many challenges, we also explore what could happen to CDS contracts and, more specifically, a March 2012 bond-CDS basis position (i.e., Long Greece 4.3% 20 March 2012 and Long CDS protection expiring on March 20, 2012).

The position in consideration may have very different outcome, in line with different possible scenarios:

**1) Pre-emptive voluntary and non-binding bond exchange.** The bond would suffer NPV loss, if exchanged, while the CDS contract would not be triggered;

**2) Pre-emptive coercive (i.e., binding) bond restructuring.** The bond would suffer the same NPV loss as per point one. Introducing CACs would not trigger CDS, but voting them would most likely do so;

**3) Risk scenario: The PSI collapses** with the possible consequence of Greece triggering a failure to pay credit event. In a default scenario (i.e., failure to pay), bond holders would suffer more material NPV loss than in case one and two, and CDS would be triggered.

**How does the bond grace period affect the CDS contract expiring on March 20, 2012?** Greek bonds have 7 days grace period for payment of principal and 30 days grace period for payment of interest. Under the Credit Derivatives Definitions, a Failure to Pay Credit Event will only occur after the expiration of any grace period applicable to the relevant non-payment, provided there is no declaration of default before.

Standard CDS contracts on the Greek Sovereign do not usually provide for a "Grace Period Extension", which extends the Scheduled Termination Date of the CDS to take into account applicable grace periods on the underlying obligation. If "Grace Period Extension" does not apply to a CDS contract that expires on 20 March, 2012, then it would be unlikely that relevant investors will be able to trigger their CDS contracts with respect to the missed payment on the bonds referenced above as the grace period on the bonds expires after the Scheduled Termination Date of the CDS.

### PSI: Getting a feel for the valuations

The final version of the PSI that imposes 53.5% principal reduction on investors consists of three main components:

- 15% notional of EFSF notes with 2Y maturity
- 31.5% notional of 30Y Greek bond with an initial coupon at 2% that rises to 3% from 2016 and to 4.3% from 2021. The bond also starts paying principal after 10 years in equal installments.
- Detachable GDP-linked securities with a notional amount equal to the face amount of the new Greek bonds.

We discuss the valuation aspects of these components individually based on the currently available information.

**EFSF notes – a cash equivalent solution?**
Investors will be given 15% notional of 2Y EFSF notes as a sweetener to participate in the PSI transaction. Although earlier proposals included a pure cash component, officials wanted to find a solution with no immediate cash requirement. While the exact details of the notes are yet to be announced, we believe that the instrument is likely to be as close as possible to a cash equivalent security, i.e. it will be designed to have minimal price fluctuation until maturity. Interest rate risk can be neutralized by introducing a floating coupon with a margin above LIBOR that corresponds to the current EFSF credit spread.

**Such a structure is likely to be priced at par, at least initially.** However, any potential deterioration in the perceived credit risk of the EFSF is likely to weigh on the secondary market price of these instruments.

Given the large expected supply of EFSF paper in the future (e.g., Greek bank recapitalization, accrued interest on existing bonds, future bailout funding in Greece, Portugal and Ireland), we expect that spread widening is a clear risk to the value of these notes.

**Greek bonds – focus on the exit yield**
The main component (31.5% of notional) of the PSI package is a 30Y bond with an amortization schedule starting after 10 years. The initial coupon is set at 2% and will step up by 100bp after 2015 and another 130bp after 2020.

There are two things to consider in terms of the valuation of this bond: the exit yield and the potential impact of the escrow account on bond valuation, the latter being separate from the PSI transaction itself but may affect the final discount factors used in the present value calculation.

**Greek exit yield: still higher than Portugal.** Given that the Greek debt stock will remain higher than in Portugal even after the PSI, we think that the Portuguese curve cannot serve as a real reference, even in an optimistic scenario. Near-term risks could also emanate from the upcoming elections and the ongoing requirement to comply with the program criteria, in addition to a potential supply shock immediately after the execution of the PSI.

**Box 3: Escrow account as a Rolling Interest Guarantee (RIG)**

According to the Eurogroup statement, Greece *"will put in place a mechanism that allows better tracing and monitoring of the official borrowing and internally-generated funds destined to service Greece's debt by, under monitoring of the troika, paying an amount corresponding to the coming quarter's debt service directly to a segregated account of Greece's paying agent."*

The escrow account is likely to serve as a rolling interest guarantee (RIG) during the life of the program that covers the next quarterly payment, if applicable, on the new bonds post-PSI.

This implies that the credit risk on the upcoming coupon payment is lower than pure Greek credit risk, given the payment is covered one quarter upfront. However, subsequent bailout tranches remain conditional on Greece complying with the program criteria and therefore further interest payments will carry a significant amount of Greek risk, in our view.

According to IMF estimates, Greece is supposed to regain market access in 2021; hence, the RIG is likely to be in place until the program ends. Cash-flows beyond the program horizon are unlikely to be affected directly by any credit enhancement owing to the escrow account.

**Analogy from past EM debt restructurings:** In fact, the above structure shows resemblance to the RIG feature of the Brady bonds. Many of the Brady bonds had a more explicit rolling interest guarantee whereby the first few coupons were backed by AA-rated cash collateral.

If an EM sovereign defaulted on its payment, the interest payment was served from the collateral account until funds were exhausted (no obligation to replace the collateral once used). As long as the EM sovereign remained current on its obligation, the collateral guarantee rolled forward to cover the next future payment. As a side note, it's worth highlighting that some Brady bonds had also principal collateral.

In Greece, the rolling or replenishing of the funds in the escrow remains a function of Greece's compliance and is likely to be in place only during the life of the second bailout program.

Since the new Greek bond has an average life of 20 years, we think the exit yield is likely to remain above 13%, at least 200bp wide to Portugal (using a simple average of the yields of PGB'23s and PGB'37s as a reference). However, taking into account all risks, the exit yield could stay higher (13-17%) even in the medium term after the supply shock abates.

**Linking the escrow account and bond valuations: Missed opportunity to improve valuations?** The introduction of the escrow account to earmark funding for debt service is analogous to a rolling interest guarantee scheme (see Box 3: Escrow account as a Rolling Interest Guarantee) and as such could provide a credit enhancement for the interest payments. However, according to the Eurogroup statement, only an amount that covers the coming quarter's debt service will be paid to the escrow implying a marginal credit enhancement due to the short period of time under protection. As a comparison, Brady bonds used to have an 18-month rolling interest guarantee, boosting their value meaningfully.

Therefore, we think that using the escrow to cover debt service payments for a more extended period could have provided investors with a considerable improvement in the value of their new Greek bonds without putting much extra burden on Greece or the official lenders.

In its current form, the escrow does not give much credit enhancement to bondholders. Since the coupons are likely to be paid on an annual basis, although not confirmed, Greece needs to comply with two more quarterly assessments following the recent review before funds would be paid to the escrow to secure the next coupon payment on the new bonds. Subsequent coupons will still carry a significant amount of Greek credit risk. If the coupon payments were made on a quarterly basis, the degree of credit enhancement would be slightly higher but still marginal. Considering all the above, we decided to omit the impact of the escrow account on the bond valuations. Therefore using a range of 13% to 17% for the exit yield provides us with an **NPV of 7-10 cents for the new Greek bond** (see Exhibit 5).

**GDP-linked securities – how attractive are they?**
Investors will also receive a detachable GDP-linked security with a notional amount equal to the face amount of the new Greek bonds (see Box 4: Introduction to the realm of GDP warrants). Given that some relevant details (i.e., the reference GDP scenario) are not available to provide a valuation, we can only look at the maximum theoretical value of the warrant to give a sense of the potential uplift it can provide to the PSI valuations. In the most benign scenario, the GDP warrant would pay an annual 1% starting from 2015 until its maturity in 2042. Using the same exit yield considerations as for the new Greek bonds, **the maximum PV could range from 1.3 to 1.8 cents** (see Exhibit 5).

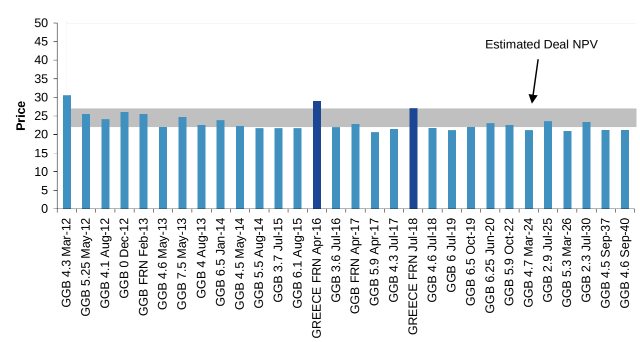
**Putting it all together – what's priced in?**
Based on all the above, we estimate that **the overall value of the PSI transaction is in the range of 22-27 cents**, depending on the exit yield and the value of the GDP-linked security (see Exhibit 5). This is broadly in line with the current secondary market prices of the local law Greek bonds (see Exhibit 6). In fact, both our exit yield estimations and the current market pricing reflect a reasonable degree of implementation risks in the near term. It is worth highlighting that the Greek bonds governed by international law carry a higher valuation that can mainly be attributed to the fact that taking a blocking position against the exercise of the collective action clauses is significantly easier than in the local law bonds with the retroactive CACs.

Exhibit 5
## Summary of the PSI valuations

| Exit Yield | EFSF notes | New GGB (excl. warrant) | Total (excl. warrant) | Max. value of warrant | Total |
|---|---|---|---|---|---|
| *9%* | 15.0 | 15.2 | 30.2 | 2.7 | 32.8 |
| *10%* | 15.0 | 13.5 | 28.5 | 2.4 | 30.9 |
| *11%* | 15.0 | 12.1 | 27.1 | 2.2 | 29.3 |
| *12%* | 15.0 | 10.9 | 25.9 | 2.0 | 27.9 |
| *13%* | 15.0 | 9.9 | 24.9 | 1.8 | **26.7** |
| *14%* | 15.0 | 9.0 | 24.0 | 1.7 | **25.7** |
| *15%* | 15.0 | 8.2 | 23.2 | 1.6 | **24.8** |
| *16%* | 15.0 | 7.5 | 22.5 | 1.4 | **24.0** |
| *17%* | 15.0 | 6.9 | 21.9 | 1.3 | **23.3** |
| *18%* | 15.0 | 6.4 | 21.4 | 1.2 | 22.6 |
| *19%* | 15.0 | 5.9 | 20.9 | 1.2 | 22.1 |
| *20%* | 15.0 | 5.5 | 20.5 | 1.1 | 21.6 |

Source: Morgan Stanley Research

Exhibit 6
## What's priced in?




Bonds with an outstanding notional of at least €2bn; dark blue bars represent Greek bonds governed by international law
Source: Bloomberg, Morgan Stanley Research

**Box 4 - Introduction to the realm of GDP warrants**

Although the exact details of the Greek GDP warrant remains to be seen, the structure seems to be similar to that of the Argentine GDP warrant. Therefore we summarize the main features of the Argentine warrant and point out the potential differences in Greece.

GDP warrants are variable rate securities where the annual payment is based on a defined fraction of the so-called ‘excess GDP’. The excess GDP is determined against a ‘base case’ GDP path projection.

The annual payout (i.e., a certain fraction of excess GDP) is triggered when all the following conditions are met:

- The actual nominal GDP exceeds the ‘base case’ nominal GDP and therefore the excess GDP is positive;

- The annual growth in actual real GDP growth rate exceeds the growth rate in ‘base case’ GDP for the relevant year;

- The total payments made don’t exceed a predefined payment cap for the security (i.e., Argentina GDP warrant payout is capped at 48% of nominal);

The above criteria ensure that payments are made only if the economy consistently exceeds the preset expectations. An initial undershoot does not only mean that the warrant does not pay anything in the first year(s) but, in order to trigger any future payments, the economy needs to close the gap to the ‘base case’ and maintain a higher than expected annual growth rate. In other words, the payouts are dependent on the GDP growth path.

The four key components that can have an impact on the attractiveness of the GDP warrant are the following:

- The ‘base case’ GDP path: if this path proves to be too aggressive, the likelihood of meeting the triggering conditions for a payout can diminish substantially;

- The ratio that defines the percentage of the excess GDP to be paid to warrant holders: the higher the better for warrant holders and a higher potential burden for the issuer in the future that can have an impact on debt sustainability;

- The payment cap;

- The total nominal of GDP warrants: the higher nominal outstanding, the lower the payout for each security;

The warrants do not evidence any principal.

In order to incentivize higher participation rate in the debt exchange, initially they are usually attached to the main security offered. However, following a short transitory period, they are usually detached in order to facilitate secondary market trading.

**What can be/is different in Greece from Argentina?** Greece will issue GDP warrants of up to €70bn (or 32% of GDP) assuming a universal participation rate.

This is broadly in line with what materialized in Argentina, where the total nominal issued in 2005 amounted to 29% of GDP. Argentina issued a further $12.7bn nominal in the second phase of restructuring in 2010; however, due to the fact that nominal GDP basically doubled during this period, the overall outstanding amount relative to GDP dropped to 18%.

In terms of the cycle when the actual restructuring happened, Argentina has already emerged from a recession since the restructuring dragged on for several years. Since its growth dynamics well exceeded the base case from the beginning, the Argentine GDP warrant paid coupons from the first year and continued to do so with the exception of 2010 as Argentina was also hit hard by the late 2008 crisis. At the same time, Greece is expected to stay in recession for some time and the warrant is not supposed to pay anything until 2015.

Although the criteria with regards to nominal and real GDP are similar to the Argentine warrant, there is a substantial difference as well. While the Argentine warrant has an overall payment cap, the Greek GDP warrant offers payments capped at an annual basis. This is beneficial to the issuer as the potential additional burden that could stem from the warrant payments is more limited. On the other hand, investors may find the structure less attractive due to the same reasoning.

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|---|---|---|---|---|---|
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| **Total** | **2,944** | | **1050** | | |

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