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# Answers to 5+1 crucial questions on the outlook of Greek public finances and the prospect of a new aid package from official lenders

**Official comments fuel market talk over a new (third) aid package for Greece**

The issue of a new aid package for Greece, which would aim to ensure adequate coverage of the country's public borrowing requirement over the period 2013-2016, came to the fore once again after Germany's Finance Minister Wolfgang Scheauble said on August 20 that "There will have to be another programme for Greece". Schaeuble's comments have been interpreted by the local and foreign media as the most explicit admission made thus far by the German government regarding the case of a new financing programme after the current one expires at the end of 2014. On his part, Greece's Finance Minister Yiannis Stournaras was quoted last Sunday by *Protothema* newspaper as saying that if Greece were in need of a new assistance programme that would be of a size of €10bn and it would carry no additional conditionality *i.e.,* over and above that already attached to the present bailout programme. Reportedly, Mr. Stournaras clarified that there is currently no official discussion about a new write down of Greek public debt, although the decisions reached at the November 2012 Eurogroup provide a legal basis for an extension of maturities and a further reduction of the interest rates charged on official loans. He was also quoted by the same newspaper as saying that an IMF involvement in the new aid programme for Greece should not be ruled out. Finally, on a relevant question regarding the prospect of Greece's return to wholesale funding markets, Greece's Finance Minister suggested that the country does not currently satisfy two necessary preconditions, namely a primary fiscal balance (on an annual basis) and two consecutive quarters of positive GDP growth, though both of these targets should be met in 2014. In a separate interview to *Der Handelsblatt* earlier this week, Mr. Stournaras reportedly said that a new write down of Greek public debt should not be necessary and that Greece will attempt to re-access financial markets some time in H2 2014 with a small bond issue, the size of which might not exceed €3-5bn.

**Answers to 5+1 crucial questions on the outlook of Greek public finances and the prospect of a new aid package from official lenders**

In what follows, we attempt to analyze some important issues related to the aforementioned developments, taking a fresh look at Greece's sovereign solvency outlook and addressing a number of important questions on the basis of recent official comments and on what we already know from the earlier Eurogroup announcements and the troika's present macroeconomic scenarios for Greece.

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***Q1 - What did the November 2012 Eurogroup statement say about the prospect of a new (third) aid package?***

Upon a full staff-level agreement between the Greek side and the troika on updated programme conditionality, the Eurogroup November 26/27, 2012 announced a number of relief measures for Greece aiming to improve debt dynamics and to reduce medium-term rollover risks. These measures were made conditional on the "positive outcome" of a debt buy-back operation (that was successfully carried out on December 2012)[1], and included *inter alia*: (i) a 100bps reduction of the interest rate charged to Greece on the loans provided in the context of the 1st EU/IMF bailout programme *i.e.,* the so-called Greek Loan Facility (GLF); (ii) a 10bps reduction of the guarantee fee costs paid by Greece on the EFSF loans; (iii) an extension of the maturities of the bilateral and EFSF loans by 15 years and a deferral of interest payments for Greece on EFSF loans by 10 years; and (iv) a commitment by Member States to pass on to Greece's segmentation account, an amount equivalent to the income on the SMP portfolio accruing to their national central bank as from budget year 2013.[2] In addition to these relief measures, the official statement of the November 2012 Eurogroup read that euro area Member States would be ready to consider further measures and assistance, if needed, including *inter alia* lower co-financing in structural funds and/or further interest rate reduction of the Greek Loan Facility, in order to ensure that Greece can reach a debt-to-GDP ratio of 124% in 2020 and "substantially lower" than 110% in 2022. As per the said statement, these new measures would be considered when Greece reached an annual primary surplus, as envisaged in the MoU, and should be subject to the full implementation of programme conditionality. In line with the communiqué released by the Eurogroup of 21 February 2012, euro area partners reiterated their commitment to provide adequate support to Greece during the life of the programme and beyond until the country regains market access.

Tables A1 & A2 show the estimated impact of the November 2012 relief measures on Greece's gross public debt-to-GDP ratio and the General Government borrowing needs and sources of funding over the period 2012-2022.[3] The tables assume: (i) full implementation of the relief measures announced at the November 2012 Eurogroup; and (ii) additional contingency (not yet identified) measures, needed to facilitate the required reduction in the debt ratio towards the aforementioned terminal targets. Over the full projection horizon of the present adjustment programme, the necessary contingency measures to reduce (under the troika's baseline scenario) the debt ratio to levels *substantially below* 110% by 2022 should amount to 7ppts-of-GDP on a cumulative basis, according to our estimates.

***Table A1*** - Contributors to the projected decline in the Greek public debt ratio in FY-2020, as envisaged in the 26/27 November 2012 Eurogroup statement (in ppts)

| | **Δ Gross public debt-to-GDP in FY-2020 (ppts)** |
|---|---|
| **Debt buyback** (due to upfront reduction in the public debt stock) | **-8.8** |
| **Debt buyback** (due to reduced coupon payments) | **-2.8** |
| **100bps cut in GLF interest rate** | **-1.7** |
| **10bps reduction in EFSF guarantee fee** | **-0.5** |
| **Return of SMP profits** | **-3.8** |
| **EFSF interest payment deferral & loan maturities extension** | **0.0** |
| **Increased T-bills issuance** | **0.9** |
| **Deferral (and reduction in the size of) cash buffer** | **0.0** |
| **Contingency measures** (implementation assumed after 2016) | **-3.2** |
| **Total** | **-20.0** |

Source: EC, IMF, Eurobank Research

[1] The debt buyback was carried out on December 13, 2012, with a total notional amount of €31.9bn of old GGBs being validly tendered in the exchange

[2] Member States under a full financial assistance programme would not be required to participate in schemes i) and iv) for the period in which they receive themselves financial assistance.

[3] See also *Greece Macro Monitor, "Successful debt buyback opens the way for the unlocking of official funding to Greece, implementation of new package of debt relief measures", Eurobank Research 13 December 2012.*

***Table A2*** *– Estimated impact of new relief measures on the general government borrowing requirement in the period 2012-2016 and beyond (EURbn) - Negative (positive) sign signifies reduction (increase) in the cumulative borrowing need*

| | Δ Net cumulative borrowing need in 2012-2016 (EURbn) | Δ Net cumulative borrowing need in 2012-2022 (EURbn) |
|---|---|---|
| Increase in funding need due to debt buyback 1/ | 11.3 | 11.3 |
| Reduced coupon payments on outstanding *privately-held* government bonds (post-buyback) | -2.9 | -9.2 |
| 100bps cut in GLF interest rate | -2.1 | -5.1 |
| 10bps reduction in EFSF guarantee fee | -0.6 | -1.4 |
| Return of SMP profits (coupons & capital gains) | -7.2 | -10.5 |
| EFSF interest payment deferral | -13.4 | -43.8 |
| Extension of GLF maturitities | 0.0 | 0.0 |
| Extension of EFSF maturitities | 0.0 | 0.0 |
| Increased T-bills issuance 2/ | -9.0 | -9.0 |
| Higher interest payment due to increased T-bills issuance 2/ | 2.0 | 2.0 |
| Cash buffer deferral (and reduction in size) 3/ | -2.0 | -2.0 |
| Total | -23.9 | -67.8 |

Source: EC, IMF, Eurobank Research

**Bottom line**

- ✓ As stated in earlier Eurogroup communiques, there is an explicit commitment by euro area partners to provide adequate support to Greece *during the life* of the present adjustment programme and *beyond*, until the country *regains* market access. This should be *conditional on* the full implementation of the structural benchmark and quantitative programme targets agreed with official lenders.

- ✓ The Eurogroup of 26/27 November 2013 announced a number of relief measures for Greece, aiming to improve debt dynamics and to reduce medium-term rollover risks. Furthermore, the accompanying official statement read that euro area partners would be ready to consider *further measures and assistance*, if needed, so as to ensure (by 2016) that Greece can reach a debt-to-GDP ratio of 124% in 2020 and "substantially lower" than 110% in 2022

- ✓ Such new assistance could include *inter alia* lower co-financing in structural funds and/or further interest rate reduction of the Greek Loan Facility and should be conditional on the achievement of an annual primary surplus in Greece's ESA95 General Government accounts as well as the full implementation of the agreed programme conditionality.

- ✓ According to our estimates, the attainment of the aforementioned targets for the public debt ratio in 2020 and 2022 requires the identification of *contingency* relief measures worth cumulatively 7ppts-of-GDP over the present adjustment programme's implementation horizon.

***Q2 – What's the size of the projected fiscal gap over the present adjustment programme's implementation horizon?***

The baseline macroeconomic framework underlying the present adjustment programme projects fiscal gaps worth around 1.75%-of-GDP in 2015 and 2%-of-GDP in 2016, the coverage of which is deemed necessary to help attain the envisaged targets of a primary surplus of 3.0%-of-GDP in 2015 and 4.5%-of-GDP in 2016 (Table B1). As per the conditionality of the present programme, specific measures to close these gaps are expected to be identified in the context of the upcoming (Sept 2013) troika review, coinciding with the preparation of the 2014 budget and the medium term fiscal plan (MTFS) update. As noted in the latest European Commission report on Greece (Occasional Papers 159/July 2013 page 24), the aforementioned fiscal gap estimates rely on the assumption of significant progress in strengthening the capacity of the tax and social security revenue administrations to increase collection and on stronger compliance incentivized by the recent tax reforms. The said report also read that in the autumn 2013 new macroeconomic and fiscal data will provide more complete information on the size of any remaining gaps. In these lines, the last IMF assessment of the Greek adjustment programme (Country Report No 13/241, July 2013) clarified that the next troika review will reassess the effectiveness of a range of measures agreed in the context of the last programme review. The aforementioned measures were adopted as part of the prior actions to the latest EFSF/IMF loan disbursements and aimed to bridge a number of fiscal shortfalls (worth as much as 0.5ppts-of-GDP per annum) that could create deviations from the agreed fiscal targets in 2013 and 2014.[4,5]

**Table B1 –** 2nd Economic Adjustment Programme for Greece: General government primary balance targets & projected fiscal gaps (ppts-of-GDP)

| | 2012 | 2013 | 2014 | 2015 | 2016 |
|---|---|---|---|---|---|
| **Primary balance target** | -1.3 | 0.0 | 1.5 | 3.0 | 4.5 |
| **Fiscal gap** | 0.0 | 0.0 | 0.0 | 1.75 | 2.0 |
| Source: EC (July 2013) | | | | | |

As things stand at this point, it is not yet clear what specific strategy will be chosen to deal with the aforementioned fiscal gaps, but, presumably, some guidance may be provided by the January 2013 IMF report on Greece. The said report reads that *"To close the estimated gap of up to €4 billion, the authorities intend to focus on retaining expiring measures, base broadening, and gaining efficiency savings from long-term structural reforms. The largest gains would come from extending expiring revenue measures (i.e., the solidarity surcharge on PIT). Staff also sees potential in continuing the reforms of the social benefits system, which remains complicated and inefficient. The fifth review, coinciding with the preparation of the 2014 budget and MTFS update, will aim to define specific measures".*

[4] For a more thorough analysis on the issue see *Greece Macro Monitor, "Adjustment in twin deficits continues; signs of stabilization in domestic economic activity increase despite lingering risks".*

[5] These measures included, among others, the frontloading of a luxury tax, the imposition of a special solidarity surcharge on income from interest and deposits, an increase in fees for lawsuits and a claw back mechanism in healthcare expenditure on diagnostics and private clinics so as to prevent expenditure deviations from fiscal targets.

**Bottom line**

- ✓ The baseline macroeconomic framework underlying the present adjustment programme projects fiscal gaps worth around 1.75%-of-GDP in 2015 and 2%-of-GDP in 2016. The coverage of these gaps is deemed necessary so as to attain the envisaged targets of a primary surplus of 3.0%-of-GDP in 2015 and 4.5%-of-GDP in 2016 and constitutes an issue that will be addressed within the context of the next troika review (Sept 2013).

- ✓ As things stand at this point, it is yet unclear what specific strategy will be chosen to deal with the aforementioned fiscal gaps. Yet, the IMF January 2013 assessment of Greece's adjustment programme provides some guidance as to the range of possibilities that are open to the authorities in dealing with the issue. Among others, these could include the extension of certain expiring revenue measures as well as projected efficiency gains from long-term fiscal and other structural reforms currently implemented.

***Q3 – Is a financing gap expected to emerge before the expiration of the present official funding programme?***

Table C1 provides an analytic depiction of the projected evolution of the general government borrowing needs and sources of funding over the remaining time period of the present official financing programme (Q3 2013-Q4 2014).[6,7] As shown in the table below, a funding gap is expected to arise in H2 2014, accumulating to ca €4.6bn by the end of that year, assuming that all relevant underlying variables (*e.g.* primary balance and privatization revenue) will evolve broadly in line with the troika's present macroeconomic scenario. In a move to dispel recent speculation that certain shortfalls may arise in Greece's funding programme, a European commission spokesman said on July 17th that the small shortfall expected in late 2014 could be covered by an unused buffer of ca €7bn in the €50bn programme envelope used to recapitalize and restructure domestic banks.[8, 9] Another way to provide additional (indirect) financing to the present programme would be the rollover of maturing Greek government bonds in the euro area national central banks investment portfolios (ANFAs). Over the first seven months of the year, Greece has reportedly paid €1.8bn for maturing GGBs held in the ANFA portfolios, while, according to reports, the potential rollover of such holdings is presently under discussion with euro area authorities. As per the European Commission report on the first review of Greece's present adjustment programme (Dec 2012, page 54), the revised troika baseline scenario for the general government financing needs and sources of funding assumes a rollover of ANFAs holdings on equal terms, while acknowledging that this option would still need to be assessed and *independently* decided by NCBs. Such a rollover would reduce the financing need and smoothen the debt repayment profile over the programme period, without having a significant impact on the evolution of the debt-to-GDP ratio. As per the same source, the overall financing secured by the rollover of ANFAs holdings would amount to €3.7bn in 2012-2014 and €1.9bn in 2015-2016.

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[6] See e.g. *"The Second Economic Adjustment Programme for Greece Third Review – July 2013" European Commission Occasional Papers 159/July 2013, "*

[7] As regards the government's funding needs for the remainder of this year, these incorporate: (i) ca €1.2bn in maturing sovereign debt; (ii) ca €2.9bn in interest payments; (iii) ca €500-700mn/per month for the clearance of government arrears to suppliers and other third parties (as per the current planning); (iv) any remaining budgetary needs that may arise in the following months.

[8] According to the official HSFS H1-2013 report released in late July 2013, the unused buffer of the ca €50bn envelope stands at €11. 3bn.

[9] Following the recent recapitalization of Greece's four systemic banks, Bank of Greece will include a new stress-test on the domestic banking system with updated data up to June 2013. Both the Greek government and the troika believe that the current buffer of the bank recap envelope would be adequate to address any additional capital needs resulting from the new stress test.

**Table C1 -** General government financing requirements & sources Q3 2013-Q4-2014 (EURbn)

| | 3Q 2013 | 4Q 2013 | 1Q 2014 | 2Q 2014 | 3Q 2014 | 4Q 2014 |
|---|---|---|---|---|---|---|
| | ***Financing needs*** | | | | | |
| **A. Government cash deficit** | **1.5** | **0.6** | **1.3** | **0.5** | **1.3** | **0.3** |
| primary deficit ("-" denotes a surplus) | -0.5 | -0.3 | -0.7 | -0.7 | -0.7 | -0.7 |
| Interest payments | 2.0 | 0.9 | 2.0 | 1.2 | 2.0 | 1.0 |
| **B. Other gvnt cash deficit** | **1.5** | **1.9** | **0.5** | **0.6** | **0.1** | **0.2** |
| Estimated cash adjustments/1 | 0.1 | 0.2 | 0.5 | 0.2 | 0.1 | 0.2 |
| Arrears | 1.4 | 1.7 | 0.0 | 0.0 | 0.0 | 0.0 |
| Cash buffer | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| ESM capital contribution | 0.0 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |
| **C. Debt maturities** | **3.8** | **1.3** | **3.5** | **11.7** | **7.5** | **2.6** |
| Bonds & loans after exchange (c1+c2) | 3.0 | 0.3 | 2.2 | 9.8 | 5.7 | 0.3 |
| *c1 Bonds after PSI and buyback* | *2.8* | *0.0* | *1.9* | *9.5* | *5.4* | *0.0* |
| *c2 Other incl. loans* | *0.3* | *0.3* | *0.3* | *0.3* | *0.3* | *0.3* |
| EU payment | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| IMF payment | 0.7 | 1.0 | 1.3 | 1.9 | 1.9 | 2.3 |
| Short-term debt | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| **D. Bank recap** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** | **0.0** |
| **E1. Gross financing needs (A+B+C+D)** | **6.7** | **3.8** | **5.4** | **12.8** | **9.0** | **3.0** |
| | ***Financing sources*** | | | | | |
| **F. Private financing sources** | **0.8** | **0.7** | **0.2** | **0.6** | **2.3** | **0.4** |
| Market financing | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| Privatization | 0.8 | 0.7 | 0.2 | 0.6 | 2.3 | 0.4 |
| **G. Additional financing sources** (ANFA & SMP profits) | **2.1** | **0.0** | **0.0** | **0.5** | **1.9** | **0.0** |
| **H. Troika loan disbursements** | **6.6** | **3.9** | **9.2** | **3.3** | **1.8** | **1.8** |
| EA/EFSF | 4.8 | 2.1 | 5.7 | 1.5 | 0.0 | 0.0 |
| IMF | 1.8 | 1.8 | 3.5 | 1.8 | 1.8 | 1.8 |
| **E2. Gross financing sources (F+G+H)** | **9.5** | **4.6** | **9.4** | **4.4** | **6.0** | **2.2** |
| | | | | | | |
| **Z. Projected funding gap (E1-E2) / negative values denote a surplus** | **-2.8** | **-0.8** | **-4.0** | **8.4** | **3.0** | **0.8** |
| ***Cumulative funding gap Q3 2013-Q4 2014*** | ***-2.8*** | ***-3.6*** | ***-7.6*** | ***0.8*** | ***3.8*** | ***4.6*** |
| Source: EC (July 2013); Eurobank Research | | | | | | |

**Bottom line**

- ✓ According to the troika's current macroeconomic scenario, a funding gap of around €4.6bn is expected to emerge in the second semester of next year. That is, assuming that no fiscal gap will emerge in 2013-2014 and all other relevant variables (e.g. privatization revenue) will evolve in line with the present targets.
- ✓ One can think of a range of strategies to deal with this problem, but recent official comments suggest that the issue will likely be dealt with in the context of a new (3rd) financing programme for Greece that will aim to cover the General Government borrowing requirement over the full implementation horizon of the present fiscal adjustment programme (2013-2016).
- ✓ As per recent official comments, a 3rd aid package would be decided in the spring of next year, provided that Greece will generate a general government primary surplus in FY-2013.

***Q4 – How does the government financing situation look like in the period stretching beyond the present funding programme horizon?***

Looking beyond the time horizon of the present Greek financing programme, the troika's baseline macro scenario projects a funding gap of €6.5bn in 2015, with the general government funding need being fully covered in 2016 through internal sources *i.e.,* primary surplus, privatization revenue and T-bills issuance.[10] Table D1 extends the analysis presented in Table C1 so as to include the projected path of the Greek General Government borrowing requirement and sources of funding over the 6-year period 2015-2020, while Graph 1 offers a related visual depiction. The last line of Table D1 shows the cumulative funding gap projected over the periods 2013-2016 (€10.9bn) and 2017-2020 (€5.9bn). Note that the first of the aforementioned figures corresponds to the troika's latest baseline projections, while the second one constitutes a *Eurobank Research* forecast.[11, 12]

As regards the potential composition of a new (3rd) aid package for Greece aiming to ensure adequate financing of the General Government borrowing need over the period 2013-2016, we may think of a number of additional relief measures that could facilitate this objective. However, as we explained earlier, a new relief package for Greece should meet the *dual* objectives of (i) providing additional government financing and (ii) facilitating a further reduction in the debt ratio, equivalent to 7ppts cumulatively until 2022, according to our estimates. As things stand at this point, a mere reduction of the interest rate charged on the bilateral euro area loans disbursed in the context of the 1st adjustment programme (GLF) and/or of the interest charge on loans disbursed from the EFSF under the 2nd adjustment programme, might not by themselves be adequate to generate the necessary reduction in the debt ratio. That is because the interest rate on GLF loans currently stands at 3-month euribor + 50bps and a further reduction of that rate by, say, 50bps would generate savings no higher than €265mn/annum or ca €2.65bn (1.4ppts-of-GDP) over a 10 year period (i.e., by end-2022).[13] Furthermore, the EFSF currently lends EU countries (Greece included) at a cost that is calculated as the average cost of all funds raised by the EFSF, including T-bills, plus a margin of 15bps.[14,15] If we assume a 15bps reduction in the interest rate on EFSF loans to Greece, total savings accrued to the country over a 10-year period would not exceed €2.2bn (or 1.1ppts-of-GDP). Therefore, additional measures would likely be needed to reach the agreed programme targets for the debt to GDP ratio i.e., 124% at the end of 2020 and "significantly below" 110% by end-2022. All in all, the generation of a small primary surplus in the 2013 General Government balance should open the door for additional relief measures as early as in H1 2014.

[10] We broadly concur with the aforementioned estimates, see e.g. *Greece Macro Monitor, "successful debt buyback opens the way for the unlocking of official funding to Greece, implementation of new package of debt relief measures", Eurobank Research, 13 December 2012.*

[11] The estimated funding gap over the period 2017-2020 assumes realization of the present EU/IMF baseline scenario for Greece.

[12] These forecasts assume that all relevant macro and fiscal variables will evolve broadly in line with the baseline scenario and crucially incorporate realization of the present programme target for privatization revenue (€24.2bn over the period 2011- 2020). Notably, our forecasts for 2017-2022 assume a reduction in annual outstanding T-bills issuance after 2016, to €9bn from around €15bn, currently.

[13] Total troika funds disbursed under the 1st programme amounted to €73bn, with €52.9bn of that amount constituting bilateral loans from euro area member states.

[14] Total troika funds earmarked for Greece under the 2ndt programme amount to €172.6bn. Of that amount, €144.6bn correspond to EA/EFSF financing over the period 2012-2014.

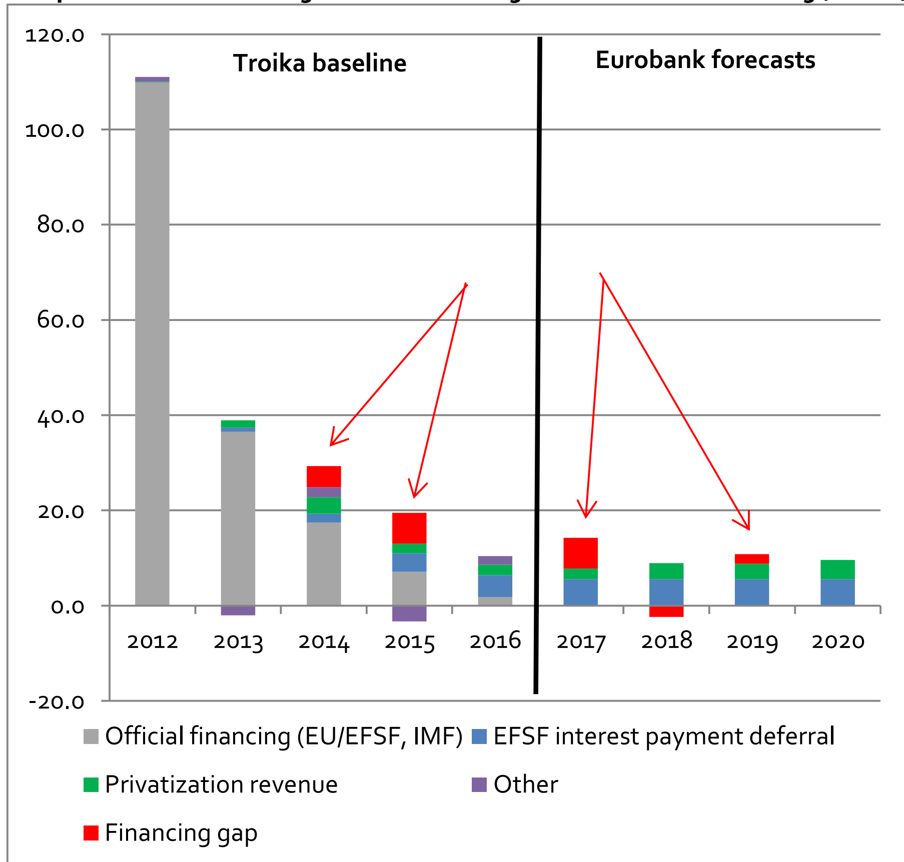
[15] In the context of Greece's 2nd adjustment programme, EFSF interest payments have been deferred by 10 years, as part of the relief measures announced by the 26/27 November 2012 Eurogroup.

**Table D1** – Greece: General government funding needs & sources of funding (EURbn)

| *In EURbn* | **2013-2016** | **2017-2020** |
|---|---|---|
| ***I. Gross borrowing need (I.1 + I.2 + I.3)*** | **84.0** | **28.1** |
| I.1 Overall general gvnt balance (accrual) | **17.0** | **4.5** |
| I.2 Amortization (bonds & loans, short-term debt, official creditors) | **64.4** | **40.3** |
| I.3 Other (I.3.1 + I.3.2 +... + I.3.6) | **2.5** | **-16.7** |
| *I.3.1 Bank recap* | *7.2* | *0.0* |
| *I.3.2 Cash upfront for PSI (sweetener & accrued interest)* | *0.0* | *0.0* |
| *I.3.3 Arrears clearance* | *7.5* | *0.0* |
| *I.3.4 Privatization* | *-9.2* | *-12.7* |
| *I.3.5 ECB related income (SMP & ANFA)* | *-8.9* | *-4.0* |
| *I.3.6 Other (debt buyback cost, cash buffer, contribution to ESM capital )* | *5.8* | *0.0* |
| ***II. Gross financing source (II.1+II.2+II.3)*** | **72.8** | **22.2** |
| II.1 Market access | **0.0** | **0.0** |
| II.2 Official financing, including disbursed & committed (II.2.1 + II.2.2 + II.2.3) | **74.1** | **22.2** |
| *II.2.1 EC bilateral loans/EAMS* | *36.5* | *0.0* |
| *II.2.2 IMF* | *26.4* | *0.0* |
| *II.2.3 EC interest deferral* | *11.2* | *22.2* |
| II.3 Deposit financing & other | **-1.3** | **0.0** |
| ***III. Financing gap (I-II)*** | **10.9** | **5.9** |

*Source: IMF (July 2013), EC(July 2013), Eurobank Research*

**Graph 1 – Greece: General government funding needs & sources of funding (EURbn)**




**Bottom line**

- ✓ According to the troika's present baseline scenario, a *funding* gap of €10.9bn will emerge in Greece's general government accounts over the period Q3 2014 – Q4 2015. That is, assuming that all appropriate measures will be taken to bridge any fiscal gaps (i.e., deviations from the agreed targets for the primary balance) that may emerge over the full implementation horizon of the present fiscal adjustment programme.

- ✓ An important point in our analysis deserving special attention is the sharp decline in the overall general government borrowing need post-2016, which is mainly the result of a 10-year deferral in EFSF interest payments agreed as part of the relief measures announced at the November 2012 Eurogroup.

- ✓ The aforementioned imply that debt servicing costs over the coming decade will remain broadly manageable, notwithstanding the current elevated public debt ratio. In turn, this points to a sharp decline in sovereign debt rollover risks over a period stretching well beyond the present adjustment programme's implementation horizon.

- ✓ The latter view is reinforced further by the following: **(i)** over 90% of Greek public debt is currently held by the official sector; **(ii)** the average maturity of debt has been extended to ca 17 years *i.e.,* around double the corresponding euro area average); and **(iii)** the average nominal interest rate on the overall debt stock is currently expected to remain lower than 3% over the coming decade *i.e.,* among the lowest in the euro area.

- ✓ Notwithstanding any decision by official lenders on a new aid package for Greece, the need to resort to market financing over the coming decade has declined significantly following the relief measures decided at the November 2012 Eurogroup. In any case, a successful attempt to re-approach wholesale funding markets as early as in H2 2014 (as recently suggested by Greece's Finance Minister) could provide a powerful positive signal to markets as regards Greece's macroeconomic and fiscal stability going forward.

***Q5 – What explains the fresh peak in Greece's public debt-to-GDP ratio in 2013 and how debt dynamics look like over the following decade?***

Tables E1 below shows the forecasted path of the Greece's gross debt over the period 2013-2020, as assumed in the troika's present baseline macroeconomic scenario.[16] As depicted in the table below, the debt ratio is expected to reach a new record peak near 176%-of-GDP in 2013, before embarking on a gradual de-escalation from 2015 onwards.

**Table E1 – Greece debt sustainability analysis**

| | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|
| Real GDP (%) | -6.4 | -4.2 | 0.6 | 2.9 | 3.7 | 3.5 | 3.3 | 3.0 | 2.6 |
| GDP deflator (%) | -0.8 | -1.1 | -0.4 | 0.4 | 1.1 | 1.3 | 1.4 | 1.7 | 1.7 |
| Nominal GDP (%) | -7.1 | -5.3 | 0.3 | 3.4 | 4.8 | 4.8 | 4.7 | 4.8 | 4.3 |
| Nominal GDP (EURbn) | 193.7 | 183.6 | 184.0 | 190.2 | 199.4 | 209.1 | 219.0 | 229.4 | 239.4 |
| General gvnt balance (% GDP) | -6.3 | -4.1 | -3.2 | -2.1 | -0.7 | -0.6 | -0.8 | -0.5 | -0.2 |
| Primary balance (% GDP) | -1.3 | 0.0 | 1.5 | 3.0 | 4.5 | 4.5 | 4.3 | 4.3 | 4.3 |
| Gross public Debt (% GDP) | 156.9 | 175.8 | 174.2 | 168.2 | 159.5 | 149.7 | 140.9 | 132.0 | 124.2 |
| Debt (EURbn) | 304.0 | 322.7 | 320.6 | 319.9 | 318.1 | 313.0 | 308.6 | 302.8 | 297.3 |

Source: IMF (July 2013), EC (April 2013), Eurobank Research

According to the IMF's DSA analysis (to which we broadly concur), the sharp spike in the debt ratio this year will be mainly the result of the *so*-called *snowball effect (i.e.,* the automatic increase in the ratio owned to the fact that nominal GDP growth will continue to lag by a large margin the nominal interest rate on the overall debt stock), which is expected to account 13ppts out of the 18.9ppts-of-GDP expected rise in the debt ratio in 2013. To a much lesser extent, the aforementioned increase will be due to official funding provided this year to recapitalize domestic banks as well as the recognition of implicit/contingent liabilities. According to our forecasts, the snowball effect will be broadly neutralized in 2014, before start reducing the debt ratio from 2015 onwards.

**Bottom line**

✓ The expected significant increase in Greece's public debt ratio in 2013 will be mainly due to the *so*-called *snowball effect i.e.,* the automatic increase in the ratio owned to the fact that nominal GDP growth will continue to lag by a large margin the nominal interest on the overall debt stock.

✓ Assuming a return to positive economic growth from 2014 onwards (as currently envisaged in the troika baseline scenario), the snowball effect will be broadly neutralized next year, before start reducing the debt ratio from 2015 onwards.

[16] The new baseline scenario projects a decline of the debt ratio below 110%-of-GDP by the end of 2022, assuming full implementation of the specific relief measures announced at the November 2012 Eurogroup

***Q6 – Is Greek public debt ratio sustainable? If not, what would it take to resume fiscal solvency?***

Assessing whether Greece's (or any other country's) fiscal position is sustainable is an intrinsically difficult task, both from a theoretical and an empirical standpoint. At first glance, a given fiscal policy can be characterized as sustainable if it can be pursued for a sufficiently long period of time without necessitating major interventions in the government's taxation or spending patterns. Alternatively, given current legislation and existing government fiscal plans, the expected evolution of revenue and expenditure ratios does not lead to excessive debt accumulation.[17] The above definition appears to be sufficiently straightforward and easy to understand. However, a closer look at the underlying assumptions needed to assess and measure fiscal sustainability in practice reveals a number of issues that have to be addressed in order to make the above definition operational. Specifically, what is the appropriate time horizon over which fiscal sustainability should be measured? Moreover, what can be characterized as exessive debt accumulation and what kind of policy intervention is required to bring the fiscal position towards a more sustainable path? Finally, how can a certain policy shift affect the model of the macro economy and how that influences our future assessment of fiscal sustainability?

In the euro area, the Stability and Growth Pact aims to address the issue of fiscal sustainability by setting quantitative limits on member states' deficit and debt ratios. Yet, the recent literature has shown that these limits may be far too restrictive. More importantly, they can be shown to be neither *necessary* nor *sufficient* to achieve a sustainable fiscal position.[18] In other words, *there* is no such thing as a *magic* debt to GDP ratio, which ensures a sustainable fiscal position. Historic experience has shown that a sovereign borrower can default on a public debt ratio not much higher than 60% (e.g. Argentina in December 2001), while, in the other hand, a country can carry a debt ratio as high as 170%-of-GDP without facing an imminent threat of default (Japan presently). Blanchard (1990a) defines sustainable fiscal policy as a policy that ensures that the debt-to-GDP ratio converges towards its initial level. Buiter (1985) uses a broadly similar definition, but instead of focusing on the evolution of the gross debt to GDP ratio, he looks at the ratio of government net worth to GDP. In other words, Buiter's definition is explicitly taking in to account the government's asset-liability position. As such, it explicitly recognizes that the government can utilize state assets to help finance its deficits; that is, until when such assets are depleted. From a pure theoretical standpoint, the latter appears to be a more accurate definition of fiscal sustainability. In practice, however, there are significant methodological problems involved in derivation of accurate estimates of the liability and, especially, the asset-side of the government's balance sheet. A major issue related to Blanchard's definition of sustainability is its apparent arbitrariness, in at least one important dimension. Specifically, there appears to be no theoretical reason why the debt ratio would ever need to return to its initial level or, more generally, to any particular level, either higher or lower than the initial one.

The recent literature has addressed the latter issue by defining fiscal sustainability in much broader terms. Under this broader definition, a given fiscal policy is sustainable if the current debt level is equal to the present value of the government's future primary balances. This definition is derived from the *government intertemporal budget constraint*, which constitutes a key equation for determining the sustainability of fiscal policy. The above considerations and definitional problems led some authors to distinguish between solvency and fiscal sustainability. In the existing literature, a government is often deemed as solvent when it satisfies the intertemporal budget constraint. In other worlds, solvency relates to a sovereign borrower's ability to finance its debts through future primary surpluses over an *infinite* time horizon. On the other hand, the term sustainability is often used to indicate a government's ability to attain a specific target value for the debt-to-GDP ratio over a finite horizon.

[17] For a comprehensive survey of the various definitions of fiscal sustainability see *e.g.* Balassone and Franco (2000).
[18] See, for instance, Polito and Wickens (2005).

Taking into account the aforementioned caveats and theoretical difficulties, we provide below a number of points that can help us assess whether Greece's fiscal position is sustainable and, if not, what needs to be done to attain fiscal sustainability going forward.

**Bottom line**

- ✓ Assessing whether Greece's (or any other country's) fiscal position is sustainable is an intrinsically difficult task, both from a theoretical and an empirical standpoint. To complicate things even further, both the recent literature and a long world history of sovereign debt crisis have demonstrated that *there* is no such thing as a *magic* debt to GDP ratio that ensures a sustainable fiscal position.

- ✓ Notwithstanding the aforementioned theoretical and definitional difficulties, and taking also into account that the term sustainability is often used to indicate a government's ability to attain a specific value for the debt-to-GDP ratio over a finite horizon, the following points provide an assessment of the attainability of the present adjustment programme's debt-to-GDP ratio targets of 124% in 2020 and "substantially lower" than 110% in 2022.

- ✓ Starting with the troika's baseline DSA scenario for Greece, it is important to reiterate that this assumes that official lenders will provide (by 2016) additional, not yet identified relief measures to the country so as to facilitate fulfillment of the aforementioned debt ratio targets. Such measures will be conditional on the achievement of an annual General Government primary surplus (as well as on the full implementation of the agreed programme conditionality) and will have to amount to 7ppts-of-GDP on a cumulative basis over the period 2013-2022.

- ✓ Looking now at the macroeconomic and fiscal assumptions underlying the Greek programme's present projections for the debt-to-GDP ratio, we note that the most important precondition for their realization is to ensure a swift return to positive economic growth rates. This is necessary to neutralize and eventually reverse the snow ball effect i.e., the automatic change in the debt ratio as a result of the difference between nominal GDP growth and the nominal interest rate on the debt stock, which constitutes the single most important determinant of debt dynamics.

- ✓ On the latter point we note that following the relief measures announced at the 26/7 November 2013 Eurogroup, Greece's nominal interest rate on the overall public debt stock is expected to average around 3.0% in 2013-2022, according to our calculation. This is among the lowest in the euro area and suggests that nominal GDP rates of 3% or higher are necessary to ensure a reversal of the snowball effect on the Greek public debt.

- ✓ On the fiscal side, the generation of a primary surplus as high as 4.5%-of-GDP by 2016 is not out of reach, given the herculean fiscal adjustment effort under way as well as past experience with major fiscal consolidation efforts in Greece. On the latter point, note that Greece managed to generate an average annual General Government primary surplus of 3.6%-of-GDP over the 7-year period leading to euro adoption in 2001.

- ✓ Crucially, to attain the programme's primary surplus targets, Greek authorities will need to demonstrate clear process in fighting tax evasion and boosting tax revenues as there is currently limited room for the implement of further significant horizontal or discretionary expenditure cuts *i.e.*, over and above these already implemented in the context of the present adjustment programme.

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